This volume is a birthday present. The papers of this volume have been written by linguists and honorary linguists, all of whom owe something to the celebratee, Professor László Varga (VL), who retires on his 70th birthday (lxx). The authors are or were his students, colleagues, friends, or any combination of these.

The papers cover a wide range of topics, from phonetics to phonology, from syntax to semantics, from cognitive approaches to philosophical ones, from the history of English and of linguistics to online dictionaries, and further. The language of the contributions was not set in the call for papers; as it happens three are in Hungarian, the rest are in English, thus accessible to a wider audience.

*

Jelen kötet születésnapi ajándék. A kötetben szereplő cikkeket olyan nyelvészek és tiszteletbeli nyelvészek írták, akik mind adósai az ünnepeltnek, Varga László professzornak (VL), aki a 70. születésnapján (lxx) nyugdíjba vonul. A szerzők az ő tanítványai, kollégái, barátai, vagy ezek tetszőleges kombinációit alkotják.

A cikkek témái széles skálán mozognak, a fonetikán és a fonológián át a szintaxisig és a szemantikáig, kognitív és filozófiai megközelítéssel, az angol nyelv és a nyelvtudomány történetén keresztül az online szótárakig és tovább. A felkérésben nem szabtuk meg a cikkek nyelvét; három készült magyarul, a többi angolul, így az olvasók szélesebb köre számára elérhető.

2990 Ft
ISBN 978-615-5219-55-9

VLlxx | Papers in Linguistics Presented to László Varga on his 70th Birthday

VLlxx

Papers in Linguistics Presented to László Varga on his 70th Birthday

Tinta Könyvkiadó/Tinta Publishing House, Budapest

VLlxx

Papers in Linguistics
Presented to László Varga
on his 70th Birthday

Professor László Varga

VLlxx

Papers in Linguistics Presented to László Varga on his 70th Birthday

edited by Péter Szigetvári

Tinta Könyvkiadó/Tinta Publishing House
Budapest 2013

Segédkönyvek a nyelvészet tanulmányozásához 158.
Reference Books for the Study of Linguistics 158
Series editor: Gábor Kiss

Editor: Péter Szigetvári
Typeset by Plain TEX, in 11/13 URW Palatino and **Computer Modern Sans Serif.**
An electronic version of this book is available at seas3.elte.hu/VLlxx

ISSN 1419-6603
ISBN 978-615-5219-55-9

The printing of this volume was made possible by a grant from
the Hungarian Academy of Sciences.

Contents

D. Robert Ladd
Varga on prosody: an appreciation vii

Tabula gratulatoria ix

Publications by László Varga xi

Editor's notes xvii

Géza Kállay
Is identity a predicate? 1

Bollobás Enikő
A katakretikus jelentésbővülésről — adalékok a jelentésváltozás tropológiájához 23

Marosán Lajos
Szó, fogalom és jelentés 33

Gábor Tolcsvai Nagy
A cognitive semantic approach to structural focus in the Hungarian clause 59

Zoltán Kövecses
Cognitive linguistics 69

Réka Benczes
Is it just language play? Alliteration and rhyme in novel compound formation 95

András Cser
Alexander Murray, a Scottish clergyman and orientalist on the origins of language 113

Attila Starčević
The Germanic Foot in Old English Phonology and Morphology . . . 121

Péter A. Lázár
About a dictionary that isn't one 141

András Imrényi
Constituency or dependency? Notes on Sámuel Brassai's syntactic model of Hungarian 167

Béla Korponay and Ildikó Nagy
Internal and External Causation 183

Gizella Baloghné Nagy
Wh-questions in Syntax First Alignment 189

Mark Newson
What you can do with a domain and why they are not phrases 211

Krisztina Szécsényi
An LF-driven account of infinitival clauses with a nominative subject . 239

Júlia Bácskai-Atkári
On the Syntax–Prosody Mapping in Hungarian Comparatives . . . 257

Zsuzsanna Bárkányi
Is there final devoicing in Spanish? 279

Zoltán G. Kiss
Measuring acoustic correlates of voicing in stops and fricatives . . . 289

Mária Gósy
Inter-speaker and intra-speaker variability indicating a synchronous speech sound change 313

Beáta Gyuris and Katalin Mády
Approaching the prosody of Hungarian wh-exclamatives 333

Alexandra Markó
The form and function of interrogatives: A corpus-based study of Hungarian questions 351

Ádám Nádasdy
"PRESUME-tensing" and the status of weak /i/ in RP 363

Daniel Huber
Structural complexity and "strong positions" in government phonology 383

Péter Siptár
Palatal controversies 395

Szigetvári Péter és Törkenczy Miklós
Pszeudo-Kratülosz újratöltve 409

Gábor Recski and András Rung
Identifying Epenthetic Nouns using Maximum Entropy Classification . 419

Nóra Wenszky and Attila Novák
The hypercorrect key witness 425

Varga on prosody: an appreciation

D. Robert Ladd

I am very happy to be asked to contribute a brief appreciation of Laci's work on Hungarian prosody. For the most part, the essence of my comments can be summed up in a single sentence: if you need to know anything about Hungarian prosody, read Laci's book (Varga 2002). It brings together in a single place the essence of his life's work on topics in and around prosody. (It is especially valuable in this respect because his career was influenced by the political division of Europe during the second half of the 20th century: many of his earlier short articles, in both English and Hungarian, appeared in sources that only ever had limited distribution and are in some cases now virtually unobtainable.) It combines the sensitivity of a native-speaker observer and the thoroughness of a lifelong language teacher with the outlook of an internationally-oriented linguist who is interested in questions of linguistic theory and in the implications of his observations for current theoretical ideas.

As the blurb on the book's jacket puts it: "The emphasis is on description, but since the analysis is embedded in current theoretical thinking, it goes far beyond the concerns of a language-specific description." Nothing else on Hungarian prosody matches its scope or subtlety. The range of problems that Laci has considered in the course of his career includes the phonology of pitch contours, the relation between pitch accents and stress patterns, and the nature of the domain types that make up hierarchical prosodic structure. He clearly believes in the importance of universal theories but doesn't hesitate to venture far into areas of language-specific detail—for example, he goes beyond the simplistic claim that Hungarian prosody is uniformly left-headed to explore what happens as phrases get longer and longer. All of this is in the book.

I don't, of course, mean to suggest that everything stopped once the book was published. Laci has continued to work on topics in Hungarian prosody and to explore their implications for current phonological theo-

ries, notably his *Phonology* paper on the Hungarian calling contour (Varga 2008) and his recent paper on the question of intermediate phrases and the universality (or not) of the prosodic hierarchy (Varga 2010). But the book — and the research career that it encapsulates — will retain its place as a standard reference for some time to come.

REFERENCES

Varga, László. 2002. *Intonation and Stress: Evidence from Hungarian.* Houndmills, Basingstoke: Palgrave-Macmillan.

Varga, László. 2008. The calling contour in Hungarian and English. *Phonology* 25 : 469–497.

Varga, László. 2010. Boundary tones and the lack of intermediate phrase in Hungarian. *The Even Yearbook 9.* Retrieved on 2013-02-20 from seas3.elte.hu/delg/publications/even/2010.html#va.

D. Robert Ladd
bob@ling.ed.ac.uk
University of Edinburgh

Tabula gratulatoria

Dear Laci, we all wish you a happy birthday and many joyful years of relaxation!

Werthmüller Gyöngyi ∗ Wenszky Nóra ∗ Varga György ∗ Varga Éva ∗ Váradi Tamás ∗ Robert Vago ∗ Trón Viktor ∗ Törkenczy Miklós ∗ Tolcsvai Nagy Gábor ∗ Tiboldi Tímea ∗ Takács Ferenc ∗ Szigetvári Péter ∗ Szesztay Margit ∗ Szépe Judit ∗ †Szépe György ∗ Szentgyörgyi Szilárd ∗ Szende Tamás ∗ Szécsényi Krisztina ∗ Szalay Krisztina ∗ Szabó Éva ∗ Surányi Balázs ∗ Stephanides Éva ∗ Starčević Attila ∗ Sóskuthy Márton ∗ Siptár Péter ∗ Sarbu Aladár ∗ Giampaolo Salvi ∗ Rung András ∗ Catherine Ringen ∗ Révész Judit ∗ Reményi Andrea ∗ Recski Gábor ∗ Rebrus Péter ∗ Frank Prescott ∗ Polgárdi Krisztina ∗ Pikli Natália ∗ Péter Mihály ∗ Péter Ágnes ∗ Pelyvás Péter ∗ Novák Attila ∗ Mark Newson ∗ William Nemser ∗ Németh Nóra ∗ Nagy Ildikó ∗ Nádasdy Ádám ∗ Medgyes Péter ∗ Mecsnóber Tekla ∗ Marosán Lajos ∗ Markó Alexandra ∗ Major Éva ∗ Magyarics Tamás ∗ Mády Katalin ∗ Lojkó Miklós ∗ Lipécz Emese ∗ Lénárt Zoltán ∗ Lázár Ildikó ∗ Lázár A. Péter ∗ Robert Ladd ∗ Laczkó Tibor ∗ Kristó László ∗ Kövecses Zoltán ∗ Kovács János ∗ Korponay Béla ∗ Kormos Judit ∗ Kontra Miklós ∗ Kontra Edit ∗ Komlósy András ∗ Komáromy Zsolt ∗ Kniezsa Veronika ∗ Király Zsolt ∗ Kiefer Ferenc ∗ Kenyeres János ∗ Kenesei István ∗ Kassai Ilona ∗ Károly Krisztina ∗ Kántor Gergely ∗ Kálmán László ∗ Kállay Géza ∗ Kállay G. Katalin ∗ Imrényi András ∗ Illés Éva ∗ Huber Dániel ∗ Horváth Katalin ∗ Hordós Marianna ∗ Hollósy Béla ∗ Holló Dorottya ∗ Hargitai Márta ∗ Hanzséros Mária ∗ Halápi Magdolna ∗ Halácsy Katalin ∗ Gyuris Beáta ∗ Gyarmathy Zsófia ∗ Carlos Gussenhoven ∗ Gráf Zoltán Benedek ∗ Gósy Mária ∗ Gellért Marcell ∗ Géher Istvánné ∗ G. Kiss Zoltán ∗ Füle Ágnes ∗ Friedrich Judit ∗ Frank Tibor ∗ Fodor Alexandra ∗ Ferencz Győző ∗ Federmayer Éva ∗ Farkas Ákos ∗ É. Kiss Katalin ∗ Eitler Tamás ∗ Dörnyei Zoltán ∗ Dóczi Brigitta ∗ Debreczeni Júlia ∗ Deák Nóra ∗ Dávidházi Péter ∗ Csóti Veronika ∗ Csontos Tamás ∗ Csirmaz Anikó ∗ Csikós Dóra ∗ Csides Csaba ∗ Cser András ∗ Csábi Szilvia ∗ Czigányik Zsolt ∗ Budai László ∗ Bollobás Enikő ∗ Benkő Ágnes ∗ Benczik Vera ∗ Benczes Réka ∗ Bartos Huba ∗ Bárkányi Zsuzsanna ∗ Bárdosi Vilmos ∗ Bán Zsófia ∗ Bánréti Zoltán ∗ Balogné Bérces Katalin ∗ Baloghné Nagy Gizella ∗ Bakró-Nagy Marianne ∗ Bácskai-Atkári Júlia ∗ Asbóth László ∗ Abrusán Márta

Publications by László Varga

Varga László. 2012. Van-e a magyarban mellékhangsúly? In: Markó Alexandra (ed.), *Beszédtudomány: Az anyanyelv-elsajátítástól a zöngekezdési időig.* Budapest: ELTE és MTA Nyelvtudományi Intézete. 35–49.

László Varga. 2012. Rhythmical variation in Hungarian revisited. In: Ferenc Kiefer and Zoltán Bánréti (eds.), *Twenty years of theoretical linguistics in Budapest: A selection of papers from the 2010 conference celebrating the twentieth anniversary of the Theoretical Linguistics Programme of Eötvös Loránd University.* Segédkönyvek a nyelvészet tanulmányozásához 142. Budapest: Tinta Könyvkiadó. 161–181.

László Varga. 2010. The Hungarian Calling Contour (as I see it now). Aspects of Prosody, University of Oxford, Faculty of Linguistics, Philology and Phonetics, 28–29 June 2010.

László Varga. 2010. Boundary tones and the lack of intermediate phrase in Hungarian. *The Even Yearbook 9* (seas3.elte.hu/delg/publications/even/2010.html).

Varga László. 2010. Frázistónus, határtónus, köztes frázis, intonációs frázis a magyarban (a stilizált eső hanglejtés kapcsán). In: Csernicskó István, Fedinec Csilla, Tarnóczy Mariann és Vančoné Kremmer Ildikó (eds.), *Utazás a magyar nyelv körül. Írások Kontra Miklós tiszteletére.* Segédkönyvek a nyelvészet tanulmányozásához 113. Budapest: Tinta Könyvkiadó. 234–240.

Varga László. 2009. A pasztellkrétától a prozodémákig. In: Kontra Miklós and Bakró-Nagy Marianne (eds.), *A nyelvészetről – egyes szám első személyben II.* Szegedi Tudományegyetem Bölcsészettudományi Kar. 193–209.

Varga László. 2009. A magyar „hullámzatos hanglejtésforma", és amit a hangsúlyról elárul. In: É. Kiss Katalin és Hegedűs Attila (eds.), *Nyelvelmélet és dialektológia.* Pázmány Péter Katolikus Egyetem, Piliscsaba. 31–46.

Varga László. 2008. A stilizált eső hanglejtés az újabb kutatások tükrében. *Nyelvtudományi Közlemények* 105 : 104–133.

László Varga. 2008. The calling contour in Hungarian and English. *Phonology* 25/3 : 469–497.

Varga László. 2005. *Metrikus fonológia és a ritmikai hangsúlyváltozás* Segédkönyvek a nyelvészet tanulmányozásához 44. Budapest: Tinta Könyvkiadó.

Varga László. 2005. Brassai Sámuel és kortársai a magyar mondat hangsúlyozásáról [Harmadik közlés.]. *A nyelvész Brassai élő öröksége. Erdélyi Tudományos Füzetek (Erdélyi Múzeum-Egyesület, Kolozsvár)* 256 : 29–37.

László Varga. 2004. Once more on the melodic segmentation of Hungarian utterances. *The Even Yearbook* 6 : 192–201.

László Varga. 2004. Hunyadi, László (2002), Hungarian sentence prosody and Universal Grammar. *The Phonetician* 89 : 69–74.

Varga László. 2003. Stilizált beszéddallamok a magyarban [Második közlés]. In: Gósy Mária és Menyhárt Krisztina (eds.), *Szöveggyűjtemény a fonetika tanulmányozásához.* Budapest: Nikol. 116–122.

Varga László. 2003. Brassai Sámuel és kortársai a magyar mondat hangsúlyozásáról [Második közlés]. In: Gósy Mária és Menyhárt Krisztina (ed.), *Szöveggyűjtemény a fonetika tanulmányozásához.* Budapest: Nikol. 158–168.

Varga László. 2003. Dallami meghatározottságok a magyar mondatban (a topik dallama). In: Gósy Mária (ed.), *Beszédkutatás 2003. Elméleti és alkalmazott fonetikai tanulmányok.* Budapest: MTA Nyelvtudományi Intézete. 147–162.

László Varga. 2002. *Intonation and Stress: Evidence from Hungarian*. Houndmills, Basingstoke: Palgrave-Macmillan.

László Varga. 2002. The Intonation of Monosyllabic Hungarian Yes-No Questions. *Acta Linguistica Hungarica* 49 : 307–320.

Varga László. 2002. Az egyszótagú magyar eldöntendő kérdések intonációja. In: Hunyadi László (ed.), *Kísérleti Fonetika Laboratóriumi Fonológia 2002.* Debrecen: Kossuth Egyetemi Kiadó. 127–140.

Varga László. 2001. Az eső-emelkedő hanglejtésforma használata a magyar nyelvben. In: Gósy Mária (ed.), *Beszédkutatás 2001. Elméleti és alkalmazott fonetikai tanulmányok.* Budapest: MTA Nyelvtudományi Intézete. 17–27.

László Varga. 2001. The Unit of Hungarian Intonation. *Annales Univ. Sci. Budapestinensis de Rolando Eötvös nom., Sectio Linguistica* XXIV: 5–13.

László Varga. 2001. Péter Siptár and Miklós Törkenczy (2000), The Phonology of Hungarian. Oxford: University Press. Pp. xiv+319. [Review]. *Phonology* 18 : 301–305.

Varga László. 2001. Péter Siptár and Miklós Törkenczy, The Phonology of Hungarian. Oxford University Press, 2000. *Magyar Nyelv* 97 : 345–348.

László Varga. 2001. Hayes' and Gussenhoven's views on rhythmical variation in English. In: József Andor, Tibor Szűcs és István Terts (eds.), *Színes eszmék nem alszanak. . . Szépe György 70. születésnapjára.* Pécs: Lingua Franca Csoport. 1292–1304.

Varga László. 2001. A magyar intonációs frázis és annak kettébontása. In: Bakró-Nagy Marianne, Bánréti Zoltán és É. Kiss Katalin (eds.), *Újabb tanulmányok a strukturális magyar nyelvtan és nyelvtörténet köréből. Kiefer Ferenc tiszteletére barátai és tanítványai.* Budapest: Osiris. 304–323.

Varga László. 2001. A hanglejtés. In: Kiefer Ferenc (ed.), *Strukturális Magyar Nyelvtan, 2 Fonológia.* Budapest: Akadémiai Kiadó. 468–579.

Varga László. 2000. A magyar mellékhangsúly fonológiai státusáról. *Magyar Nyelvőr* 124 : 91–108.

László Varga. 2000. Approaches to rhythmical variation in English. *The Even Yearbook* 4 : 153–178.

László Varga. 2000. Contour insertion in Hungarian intonation. In: Földi Éva és Gadányi Károly (eds.), *Vox Humana, Bolla Kálmán professzor hetvenedik születésnapjára.* Budapest: Eötvös Loránd University. 397–406.

Varga László. 2000. Dallamcsere az intonációs frázis belsejében. In: Gósy Mária (ed.), *Beszédkutatás 2000. Beszéd és társadalom.* Budapest: MTA Nyelvtudományi Intézete. 87–99.

Varga László. 1998/99. Két főhangsúlyt tartalmazó szavak ritmikai hangsúlyváltozása. *Nyelvtudományi Közlemények* 96 : 44–89.

László Varga. 1998. Rhythmical variation in Hungarian. *Phonology* 15 : 227–266.

László Varga. 1998. The intonational phrase and secondary intonational phrase formation in Hungarian. *The Even Yearbook* 3 : 251–263.

Varga László. 1998. Dallamelemek és szótagok asszociációja a magyar hanglejtés autoszegmentális tárgyalásában. *Általános Nyelvészeti Tanulmányok* XIX: 257–272.

Varga László. 1997. Brassai Sámuel és kortársai a magyar mondat hangsúlyozásáról. *Nyelv- és Irodalomtudományi Közlemények (Kolozsvár)* XLI: 143–153.

László Varga. 1996. Hungarian intonation contours. *The Even Yearbook* 2 : 111–144.

László Varga. 1995. Stylization of the falling tone in Hungarian intonation. In: Jack Windsor-Lewis (ed.), *Studies in general and English phonetics, Essays in honour of Professor J. D. O'Connor.* London: Routledge. 278–287.

László Varga. 1994. *Topics in English Syntax (A Supplement to the English Phrasal and Clausal Syntax Course).* Budapest: ELTE, Institute of English and American Studies.

Varga László. 1994. A hanglejtés. In: Kiefer Ferenc (ed.), *Strukturális Magyar Nyelvtan, 2, Fonológia.* Budapest: Akadémiai Kiadó. 468–549. (2nd ed.: 2001.)

László Varga. 1994. Rhythmic stress alternation in Hungarian. *The Even Yearbook* 1 : 233–254.

Varga László. 1993. *A magyar beszéddallamok fonológiai, szemantikai és szintaktikai vonatkozásai.* Nyelvtudományi Értekezések 135. Budapest: Akadémiai Kiadó.

László Varga. 1993. On common nouns that are neither count nor mass. In: Zoltán Kövecses (ed.), *Voices of Friendship (Linguistic Essays in Honor of László T. András 1930–1993).* Budapest: Eötvös Loránd University. 91–101.

Varga László. 1991. Prozodémák a magyar beszédben. *Nyelvtudományi Közlemények* 90 : 47–71.

Varga László. 1990. Stilizált beszéddallamok a magyarban. In: Balogh Lajos és Kontra Miklós (eds.), *Élőnyelvi tanulmányok.* Linguistica A/3. Budapest: MTA Nyelvtudományi Intézete. 169–177.

Varga László. 1990. A magyar hanglejtés fonológiai szempontú kutatásának rövid története. *Egyetemi Fonetikai Füzetek* 3 : 183–196.

Varga László. 1989. Szintaktikai szerkezet és intonációs tagolás a magyar mondategészben. *Általános Nyelvészeti Tanulmányok* XVII: 241–278.

László Varga. 1989. The stylized fall in Hungarian. *Acta Linguistica Hungarica* 39 : 317–331.

Varga László. 1989. A magyar nyelv dallamprozodémái. *Egyetemi Fonetikai Füzetek* 2/3 : 149–215.

Varga László. 1988. A gazdagréti kábeltelevízió műsorából válogatott anyag intonációs átirata. In: Kontra Miklós (ed.), *Beszélt nyelvi tanulmányok.* Linguistica A/1. Budapest: MTA Nyelvtudományi Intézet. 5–21.

Varga László. 1987. Prozodémák a magyar beszédben és jelölésük az intonációs átiratban. In: Szabolcsi Anna (ed.), *Műhelymunkák a nyelvészet és társadalom köréből, III.* Budapest: MTA Nyelvtudományi Intézete. 91–119.

Varga László. 1987/88. Hozzászólás egy hangsúlytanulmányhoz. *Nyelvtudományi Közlemények* 89 : 53–66.

Varga László. 1986. Vélemények a magyar mondat hangsúlyozásáról — avagy Brassai és a többiek. *Nyelvtudományi Közlemények* 88 : 181–188.

László Varga. 1986. A contrastive analysis of some types of negative sentence in Hungarian and English. In: Éva H. Stephanides (ed.), *Contrasting English with Hungarian (Studies in Modern Philology 2).* Budapest: Akadémiai Kiadó. 204–235.

Varga László. 1986. Angol nyelvtanulóink néhány intonációs problémája. In: Rot Sándor (ed.), *Új törekvések az anglisztikában és amerikanisztikában, The Way to English 5.* Budapest: Eötvös Loránd Tudományegyetem. 97–111.

László Varga. 1985. Intonation in the Hungarian sentence. In: István Kenesei (ed.), *Approaches to Hungarian 1.* Szeged: József Attila Tudományegyetem. 205–224.

László Varga. 1984. Structuralist and anti-structuralist views on accent in American linguistics. In: Tibor Frank (ed.), *The Origins and Originality of American Culture.* Budapest: Akadémiai Kiadó. 745–757.

László Varga. 1984. The syntactic structure and intonational segmentation of Hungarian sentences. *Acta Linguistica Academiae Scientiarum Hungaricae* 34 : 197–250.

László Varga. 1983. Hungarian sentence prosody: and outline. *Folia Linguistica* 17 : 117–151.

László Varga. 1983. Factual and evaluative modalities in Hungarian predications expressing measure. In: Sándor Rot (ed.), *Languages in Function (Materials of the XIIIth Annual Conference of the Societas Linguistica Europaea held in Budapest 3–6 Sept. 1980).* Budapest: 301–306.

László Varga. 1982. Differences in the stressing of re-used nouns in English and Hungarian. In: László Dezső (ed.), *Contrastive Studies Hungarian–English.* Budapest: Akadémiai Kiadó. 113–122.

Varga László. 1982. Két szintaktikai pozícióról. *Magyar Nyelv* 78 : 159–169.

Varga László. 1981. A topicról és a fókusz utáni elemek sorrendjéről (egy szintaktikai modell kapcsán). *Magyar Nyelv* 77 : 198–200.

Varga László. 1981. A magyar névszói állítmány kérdéséhez. *Nyelvtudományi Közlemények* 83 : 79–95.

Varga László. 1981. A magyar intonáció — funkcionális szempontból. *Nyelvtudományi Közlemények* 83 : 313–339.

Varga László. 1981. D. L. Bolinger és L. S. Hultzén az intonációról. *Filológiai Közlöny* 27 : 184–193.

László Varga. 1981. D. L. Bolinger and L. S. Hultzén on accent. *Annales Univ. Sci. Budapestinensis de Lorando Eötvös nom., Sectio Linguistica* 12 : 85–91.

Varga László. 1981. Stephanides Éva: „A Contrastive Study of the English and Hungarian Article." *Modern Nyelvoktatás* 18 : 197–200.

Varga László. 1981. Angol intonációs tananyagminimum. *Modern Nyelvoktatás* 18 : 149–174.

Varga László. 1980. Tényszerű és véleményszerű modalitás a mértékkifejező magyar állítmányi szerkezetben. *Magyar Nyelv* 76 : 331–338.

László Varga. 1980. A contrastive analysis of English and Hungarian word stress. In: László Dezső és William Nemser (eds.), *Studies in English and Hungarian Contrastive Linguistics.* Budapest: Akadémiai Kiadó. 233–244.

László Varga. 1980. Observations on negation in Hungarian and English. *Acta Linguistica Academiae Scientiarum Hungaricae* 30 : 67–96.

Varga László. 1979. Az ellentéti hangsúly különleges helye. *Magyar Nyelv* 75 : 332–334.

László Varga. 1978. Some differences in English and Hungarian context-dependent sentence-stress placement. *Annales Univ. Sci. Budapestinensis de Lorando Eötvös nom., Sectio Linguistica* 9 : 185–191.

László Varga. 1977. Contrastive linguistics and the approximative system. *English Teaching Forum* 15 : 38–39.

Varga László. 1976. A magyar emelkedő-eső hanglejtés transzfer hatása magyarok angol beszédében. *Idegen Nyelvek Tanítása* 19 : 17–22.

Varga László. 1976. Megjegyzések John Coates „Attitudinal factors in Hungarian and English intonation" c. cikkéhez. *Modern Nyelvoktatás* 14 : 126–130.

László Varga. 1975. An introduction to a contrastive analysis of English and Hungarian sentence intonation. In: Erzsébet Perényi and Tibor Frank (eds.), *Studies in English and American 2.* Budapest: Eötvös Loránd University. 399–446.

László Varga. 1975. *A Contrastive Analysis of English and Hungarian Sentence Prosody.* The Hungarian-English Contrastive Linguistics Project Working Papers No. 6. Budapest and Arlington, Va.: Linguistics Institute of the Hungarian Academy of Sciences and Center for Applied Linguistics.

Varga László. 1975. Az angol kettős hangsúlyról. *Idegen Nyelvek Tanítása* 18 : 121–124.

Varga László. 1975. Egy kontrasztív analízis végeredménye: magyar anyanyelvűek várható hibái az angol szintagmák és mondatok hangsúlyozásában. *Modern Nyelvoktatás* 13 : 3–28.

Varga László, Forintos Kálmánné, and Horváth József. 1970. *1754. sz. Angol nyelvkönyv a szakosított tantervű általános iskolák 7. osztálya számára* Budapest: Tankönyvkiadó.

Varga László, Forintos Kálmánné, and Horváth József. 1970. *1854. sz. Angol nyelvkönyv a szakosított tantervű általános iskolák 8. osztálya számára* Budapest: Tankönyvkiadó.

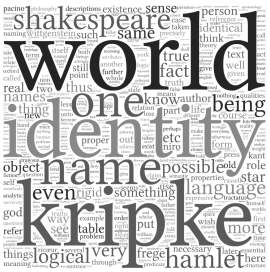
Editor's notes

This volume is a birthday present. The papers of this volume have been written by linguists and honorary linguists, all of whom owe something to the celebratee, Professor László Varga, who retires on his 70th birthday. The authors are or were his students, colleagues, friends, or any combination of these. There are many other friends and colleagues who could not afford to contribute a paper, but have sent their warmest congratulations to "Laci", as we know him.

The papers cover a wide range of topics, from phonetics to phonology, from syntax to semantics, from cognitive approaches to philosophical ones, from the history of English and of linguistics to online dictionaries, and further. The language of the contributions was not set in the call for papers; as it happens three are in Hungarian, the rest are in English, thus accessible to a wider audience.

The volume was first published as a website (seas3.elte.hu/VLlxx, ISBN 978-963-284-315-5). The current version was generated from the *html* files of that site. This is the excuse for some of the typographical blunders. The tag clouds at the beginning of each paper were created by Tagul (tagul.com). The publication of the paper version was made possible by a grant from the Hungarian Academy of Sciences, which we here acknowledge with gratitude. Thanks are also due to Orsolya Mandl and Péter Siptár for spotting many typos in the manuscript. It is the reader's task to mark those that still remain.

Péter Szigetvári



Is identity a predicate?

Géza Kállay

Meaning, epistemology and ontology

It is easy to understand why anyone concerned with linguistics, logic, literature—so with language in a broad sense—shudders when it comes to the problem of meaning (here "meaning" taken to mean 'anything that may have significance for a human being'): sooner or later meaning will involve mammoth ontological and epistemological problems, ie questions of "existence", of "what there is", and what, and how, we can know about, and of, the world.[1] When, in the late 1880s, Gottlob Frege laid the foundations of a new logical semantics, he was soon hailed as consciously and consistently turning (for some: reducing) traditional epistemological and ontological problems into genuinely *semantic* ones.[2] All of a sudden age-old riddles of philosophy looked as if at least some of them could be solved through some semantic, especially logical analyses of language: several previous philosophical questions looked as pseudo-questions, ie as sheer nonsense that had led the mind astray, while it was through the operations of semantics, more specifically through logical syntax and semantics, and studying the grammar and the meanings of natural human languages that thinkers

[1] An early draft of this paper was given in the so-called BuPhoc series of the Department of English Linguistics of ELTE in the April of 2007, at the invitation of Professor László Varga. Yet it is not only this invitation for which I am grateful to him. He is among those who—with his "Introduction to Linguistics" lectures (back in 1979) and his several subsequent seminars in English linguistics, and especially with his example as a scholar, teacher and a great personality—has made a huge impact on my thinking. For a while, I even wished to become a linguist. Ultimately, I did not, yet this paper perhaps indicates that I have never given up my interest in questions of meaning, one of the central problems of linguistics, too.

[2] For more on this cf Dummett (2001 : 6–20).

hoped to gain insight into the workings of human thinking and into what there is (at least in human conceptual-linguistic schemes). Syntactic and semantic theories were supposed to decide philosophical questions, while, of course, there were major steps forward in logic and mathematics independently of the analysis of natural languages.

Thus, on the one hand semantic theories had to "confess" (thematise) their ontological and epistemological commitments, while epistemology and ontology looked hopefully, even yearningly at semantics on the other. This is why no serious semantic theory can say: "I do not have an ontology and epistemology" — it will inevitably have one, even if its ontology is a version of naive realism, or if its epistemology is confused. This is one of the reasons for calling the 20th century "the century of language", or of "the linguistic turn". What is significant — even for my present purposes — is that it was not only Analytic or Anglo-Saxon philosophy that expected "salvation" from language, and especially the study of meaning: the Continental (German-French) tradition of thinking soon caught up. For example, Martin Heidegger around the middle of his *Being and Time* felt the need to give an account of language (cf Heidegger 1951 : 213–230), and later on turned to the interpretation of poetic texts (such as Hölderlin's) to describe what he meant by "truth" (cf Heidegger 1981). One of the "fathers" of hermeneutics, Hans-Georg Gadamer famously said that the structure of being is brought into language by the articulation of *Logos* (cf Gadamer 2010 : 460), and more examples could easily be given. In his admirable book, *Aesthetics and Subjectivity from Kant to Nietzsche*, Andrew Bowie even argues that the "linguistic turn" happened not in the analytic tradition in the last decades of the 19th and the first decades of the 20th century with Frege, Russell, Moore, Wittgenstein and others but some hundred years before, in German Romanticism after Immanuel Kant, in the works of such thinkers as Hamann, Humboldt, Herder, Novalis and others, whose influence proved especially inspirational in the Continental line of doing philosophy (cf Bowie 2003 : 5–14). It is all the more discouraging that representatives of the Analytic and the Continental school still talk very little to one another, some of the lines of division being their relation to what extent a theory of meaning could or should be formalised; whether there is a "cognitive content" that remains unaffected in the process of translation, reformulation or paraphrase; and whether the language of poetry, fiction and drama should be taken into consideration in a theory of meaning at all.

Reference and identity: Frege, Russell and some of their followers

However interesting the above questions may be, they are for a more extensive and further study. Here, taking my clue from the interrelatedness of semantics, ontology and epistemology, I will examine, in a non-formalised manner, one of the central tenets of any system concerned with meaning: the phenomenon of identity, or, more precisely, the phenomenon that human beings are capable of comprehending what it means that $a = a$, or a is a, ie that something or somebody is identical with itself, herself, himself. In a way, it may be wrong to call this a "problem", since identity looks perhaps the only unproblematic part of all semantic theories, so much so that some theoreticians have precisely tried to build their analyses of meaning on the identity relation (see below). In philosophy (logic) the identity relation is often called an "analytic", ie (logically) necessary truth, which is supposed to hold true under all circumstances. The interpretation of an analytic sentence — eg that "Shakespeare is Shakespeare", or that "Bachelors are unmarried men" — remains curiously "within" the boundaries of language: it is enough to know the syntactic (logical) structure of the sentence (proposition) and the meaning of its constituents to see that it is necessarily true: one does not need any information coming from the "external world" (one does not have to compare the sentence with "reality") to see that the sentence is true. Yet, and as a result, we pay a heavy price for the certainty of analytic truths: they do not convey any useful piece of information about the world; analytic truths are tautologies, tautology defined by Wittgenstein in the *Tractatus Logico-Philosophicus* as being "unconditionally true" (4.461). Tautologies are "not pictures of reality" (4.462), they "admit *all* possible situations" (4.462), a "tautology leaves open to reality the whole — the infinite whole — of logical space" (4.463).[3]

The riddle that there are identity statements which do report valuable pieces of information about the world was noticed by Gottlob Frege in his famous article published in 1892, *Über Sinn und Bedeutung* (*On Sense and Reference/Nominatum)* (Frege 1992 : 150–180). Frege's by now well-known riddle was: what do we wish to express with an identity relation the general form of which can be $a = b$, when the two parties on the left and the right hand side of the equation are even visibly different? To say, as Frege's example goes, that "the morning star" *is* "the evening star", that the morning star is identical with the evening star, or, as Kripke later put it, that

[3] Throughout, I quote the *Tractatus* according to Wittgenstein (1961). My references, as it is the custom, are to paragraph, and not to page numbers.

Hesperus and Phosphorus are identical, sounds at least strange, since we surely neither wish to communicate the identity of the signs themselves (we can see or hear they are not identical), nor do we wish to produce a tautology. Frege's celebrated solution was that when we say "the morning star is the evening star", we say nothing else than that the two names (descriptions), "morning star" and "evening star" refer to the same external object in the external world, namely to the planet Venus.[4] Of the planet Venus several names or descriptions are possible (one of these is precisely "the planet Venus", or: "Morning Star", or "Phosphorus", or "Evening Star", or "Hesperus", but even, under the right circumstances, "the star I saw yesterday in the sky", etc) and with identity statements like the above we wish to establish that they have the same referent: they refer to one and the same thing (nominatum, denotatum, designatum; they have the same "Bedeutung", they have the same extension). Frege called the referent or thing, or object, ie *to* which we refer "Bedeutung", while the "content" of the descriptions (names) like "morning star" or "evening star", ie the content of that *with* which I refer, he called "Sinn".[5] So the sense (intention) of a description is the "road", the "path" "on" which I get to the object (and there are several ways to get to something, or somebody, as there are several ways, eg to get to the Department of English Linguistics at ELTE).

Bertrand Russell, in the early years of the 20th century, worked out a similar theory (cf Russell 2001), although without explicitly dividing meaning into sense and reference. Russell agreed that, besides proper names, we refer to objects and persons with descriptions such as: "the other side of the moon", or "the present King of France". Based on the theories of Frege and Russell, it became customary to give reference by way of descriptions. However, some problems soon became obvious. A description (the sense, the meaning of the referring expression) was claimed to pick out the object or person from among all the others unambiguously, since

[4] On the problems of "washing names ("Venus") and descriptions ("the morning star" / "the star we see in the evening") together", and especially on the question whether Frege ever claimed that sense would "determine" Bedeutung, cf Heck and May (2008 : 3–39) but I cannot pursue this argument any further here.

[5] It is often pointed out that although Sinn is very close to English *sense*, Bedeutung is a rather unfortunate term since it means precisely 'meaning' in German, while Bedeutung in Frege's use of the term in fact means the object referred to itself. But the root of the word Bedeutung is *Deut*, *deuten auf* means to 'point at', *deuten* 'to explain', *Deutlichkeit* 'clearness', and thus it seems that Frege uses Bedeutung in a more literal sense, which might be translated as: 'that which has been clearly, unambiguously pointed at, and thereby explained from the point of view of what we are talking about'.

descriptions were supposed to function as names. Therefore, from Frege on it was claimed that a description determines the referent (the Bedeutung). Yet how is determination possible? There is nothing necessary in giving an object or person through this or that name or description. Nothing has a "natural" or "right" designation; if it had, we would not bother about naming: it would be automatic and we would all speak the same language (this is a dream-world Socrates fancies, as one possible alternative, and more in terms of a parody, in Plato's dialogue, *Cratylus*). A description is nothing more or less than a piece of knowledge or belief about the object; for example, I may know (believe) that there is a star which appears in the sky both in the morning and in the evening, and I may use both descriptions to refer to it. Yet, first of all, successful reference may occur through an imprecise, or even false piece of knowledge. The morning and evening "star" is an excellent example because Venus is not a star but a planet, yet who cares, if we all know what we are talking about. Several philosophers and semanticists, including Strawson (1959, 2001), Searle (1958) or Donnellan (2001) claimed that like everything else in language, naming is also based on convention. They added a few very useful refinements to Frege's and Russell's theory: eg Strawson pointed out that we borrow descriptions from one another. There surely have been an "initial act of baptism" but from that moment on people simply follow the practice of the name-giver in applying the same name to the referent in an imitative and repetitive manner. Referring—like many other activities in and with language—occurs along the lines of a social chain. Even further, we might know very little about a person, and yet we are still able to successfully refer to him: a single expression we have just heard about him, eg "the boy standing with the empty champagne glass", also exhausting all our knowledge about the person with the same stroke, is enough for successful reference under the right circumstances. Further, Strawson and others held that although it is true that various people may have different pieces of information about a referent — for example, a Shakespeare scholar has, say, a hundred and twenty ways to refer to Shakespeare, while ordinary people three or four— we usually fix referents in fact through "clusters" of descriptions, and that will ensure determining the referent more or less unambiguously. We will always look for, in terms of knowledge, the common denominator when referring to people and if, talking about Shakespeare, for example the expression "member of the Lord Chamberlain's Men" will not work, we will resort to "the Swan of Avon", or the "the author of *Hamlet*" (though not "the author of *Pericles*", since it is less widely known that we attribute a play to Shakespeare under this title, too). What we know about Shakespeare might be given in the form of clusters of descriptions which we

measure against the descriptions of others. Strawson, largely following the pragmatic approach to language introduced by Wittgenstein in *Philosophical Investigations* (2001), envisaged referring as a language-rule following, convention-based activity. Keith Donnellan and others, to ensure the determination of reference through description, insisted on supposing a causal relationship between description and referent, yet this causal nexus is also based on convention.

Reference and Kripke: rigid designators and possible worlds

Then came Saul Kripke, in 1970, with a series of lectures held at Princeton University, entitled *Naming and Necessity* (1980), which put the problem of reference into an entirely new light. Since it remains true that every semantic theory will imply epistemological, as well as ontological questions, Kripke offered some real challenges to philosophy, in a — to my mind — highly original way.

Kripke's main objection to descriptive theories was on the level of both epistemology and ontology. On the level of epistemology — ontology will be discussed later — he claimed that none of the items of knowledge, given in the descriptions, are necessary facts of our world. The problem is not that items of knowledge, true or false, or even on an *ad hoc* basis, could not do the job of referring — Kripke is very much aware that this is done all the time. The real problem is that descriptive theorists treat proper names on the same level as descriptions, in other words they regard the proper name "Shakespeare" to be exactly synonymous with "member of the Lord Chamberlain's Men", or "the Swan of Avon", or "the author of *Hamlet*". But suppose that Shakespeare never became an actor and playwright, suppose he was not born in Stratford, suppose he was too lazy to write *Hamlet*, and still we would be able to successfully refer to Shakespeare with the name "Shakespeare". Of course, *William* Shakespeare could have been named otherwise by his parents, eg "Christopher", or "Ben", or even "Voldemort", although this last one is not very likely. The fact that Shakespeare happened to be named William is, in itself, not a necessary fact of the world. But once his name was decided on, the name, as Kripke puts it, rigidly designates (cf Kripke 1980 : 48) — refers to — the person called William Shakespeare: there is a *necessary* relationship between the name "William Shakespeare" and William Shakespeare, the person, while all we can "predicate" of Shakespeare and thus give also in the form of descriptions (that he wrote *Hamlet*, etc) could have been otherwise, and thus are contingent facts of our world. (cf Kripke 1980 : 62).

However, after the naming process had taken place, that William Shakespeare is William Shakespeare is *not* a contingent fact of the world, since this sentence expresses that William Shakespeare is identical with himself. Thus, for Kripke, only "Shakespeare is Shakespeare", that is, only a genuine identity statement is an analytic truth, and thus a necessary truth in the strict logical sense. By contrast, "Shakespeare is identical with the author of Hamlet" is not an analytic and, thus, a necessary truth.

The problem, then, with the proponents of the descriptive theory of reference, such as Frege or Strawson is that they treated proper names and descriptions as synonymous. Here, of course synonymy is meant not as poetic, or rhetorical, or stylistic synonymy but as strictly cognitive synonymy. Poetically, no two expressions will ever be totally synonymous (cf Quine 1963 : 28). But Kripke's claim is that not even cognitively will a description of somebody and his or her proper name be synonymous because the criterion of cognitive synonymy is that you can change the two terms — the description and the proper name — in the same proposition, ie in exactly the same context *salva veritate,* ie without changing the truth value of the proposition. But while "Shakespeare is Shakespeare" is a necessary truth, "Shakespeare is identical with the author of Hamlet" is not.

This, of course, needs further refinement. The sentence "Shakespeare is not Shakespeare" can make perfect sense in certain contexts: for example, imagine a scholar who, after having done serious research on Shakespeare's life and work, arrives at the conclusion that everything there is in books, documents, etc about Shakespeare is wrong, he has been mixed up with somebody else from the start (this claim, as it is well known, has been made in "real life" more than once). That scholar, going up to the pulpit at a conference might start his revelatory lecture by telling his audience: "Ladies and Gentlemen, Shakespeare was not Shakespeare."[6] But the scholar will precisely wish to communicate that all items of *knowledge* and *beliefs* humankind has so far associated with the name Shakespeare is false and not that Shakespeare, if there was such a person, is not identical with himself. The scholar will wish to say: Shakespeare did not do this or that, did not write the plays attributed to him, etc; eg somebody else did. It will be some kind of *knowledge* the scholar will challenge, not that a person was identical with himself.

[6] Tautologies like "Shakespeare is Shakespeare" can be expressive of something else than identity, too. Eg somebody enthusiastically tells me about an excellent *Hamlet*-performance he saw and I may respond: "Well, Shakespeare is Shakespeare", meaning something like 'Shakespeare is still (one of) the best playwright(s), so what did you expect?' These uses of tautologies are in the "Boys will be boys" category.

Thus, Kripke pays special attention to identity, treating the name as somehow being "expressive" of the identity of the person or thing; the name as rigid designator is something the designated person or object simply cannot "lose" but is "attached" to each object or person with the force of logical necessity. We may understand what the force of logical necessity is if we look at the definition of necessary truth: a proposition is necessarily true if and only if (=iff) it is true given the way the world (our "real world as we know it") actually is, and it would have been true, even if the world had been in any other possible state it could have been in (cf Kripke 1980 : 62–63 and Soames 2003 : 338). Yet this is not without problems, either. Who could precisely tell what possible state the world "could have been" in? Is it, for example, a possible state of the world that there are no human beings, or that there is no language, in it? These are clearly metaphysical (ontological) questions I will not go into here. Kripke's definition of rigid designation claims identity for something or somebody in and across all possible worlds, whatever possible worlds may be: for a term X to be a rigid designator is for it to designate (refer to) the identical (the same) person or object in every possible world where the term designates at all (cf Kripke 1980 : 102–105). I just note here that "in every possible world" sounds to me very much like "the whole — the infinite whole — of logical space" tautologies leave open in Wittgenstein's *Tractatus* — more on this later.

Possible worlds: and example

The concept of possible worlds was introduced not by Wittgenstein but by David K. Lewis (1968), yet Kripke does not conceive of possible worlds the way Lewis does (cf Kripke 1980 : 44–47). Instead of going into lengthy comparisons, I will give an example. Suppose that for the role of Michael Corleone in the film *Godfather,* two actors competed: Al Pacino and Robert de Niro. Actually, ie in our world, it was Al Pacino who got the role but this is a contingent fact of the world that he did; it could have been otherwise, so there is a possible world where the role was played by Robert de Niro. Kripke's point is that Al Pacino remains Al Pacino, through the rigid designation of his very name, even in the possible world where Robert de Niro played the role. In the possible, alternative world it was not somebody "similar" to the real Al Pacino who did not get the role (as Lewis thinks); Kripke's proof is that Al Pacino could not have cared less about a "similar" Al Pacino not getting the role; it would have been the *real, this*-world Al Pacino who may have mourned not to have been able to play Michael Corleone, and would have envied Robert de Niro for playing it.

Let us suppose even further that after the auditions somebody, say Marlon Brando (who played Michael's father, Vito Corleone in part 1 of *Godfather*) starts to lecture to de Niro on under what conditions he would have been given the role: "If you had paid more attention to your partner", "if you had tried to please the director a little bit", "if you had studied the script more carefully", etc. Then Marlon Brando would in fact be giving (at least some of) the truth conditions that would make the sentence "Robert de Niro succeeded in getting the role of Michael Corleone" true in our (real) world. But would Marlon Brando, lecturing to de Niro, have said: "if you had tried to please the director a bit, etc, *and if you had been identical with yourself?*" No, Brando took (would have taken) for granted that de Niro is identical with himself, both in the real world and in the possible world where de Niro got the role.

Existence is not a predicate

Similarly, Brando, lecturing to de Niro would not have added: "you would have been given the role had you existed", either: that is also taken for granted. I think — and this is now my interpretation of *Naming and Necessity* — that Kripke's whole theory about rigid designators revolves around the idea that identity is not a predicate. It is an age-old insight (though still contested, of course) that existence is not a predicate. It was relying on this thesis that Immanuel Kant demonstrated why Descartes's (and, previously, several other philosophers') ontological argument about the existence of God was at fault: they treated existence as a predicate, ie as an attribute, a quality we may claim about a being (cf Kant 1956 : 504). Descartes's argument was that if we have the concept of God in our minds and we see in that concept that, for example, God is perfect, then it would be absurd, ie a logical contradiction to say that he does not exist: the idea of perfection includes or implies existence. But Kant claims that we cannot treat the predicate "exit[s]" on the same level as, say, "is [be] perfect". If I characterise, for example, my neighbour and say that he is ninety years old, he has white hair, he is six feet tall, he likes apricots, and so on, shall I add, somewhere in my account: "and, oh, by the way, he exists"? Not at all: you and I have taken for granted that it only makes sense to give the attributes of someone if the person talked about exists, and thus existence will not be given among the attributes. In a sense, in a way, everything we talk about, exists: we may call this "mention-existence". Imagining the existence of something is also a kind of mention-existence: "My financial position" — Kant writes — "is, however, affected very differently by a hundred real thalers than by the mere concept of them (that is, of their possibility). For the ob-

ject, as it actually exists, is not analytically contained in my concept, but is added to my concept (which is a determination of my state) synthetically; and yet the conceived hundred thalers are not themselves in the least increased through thus acquiring existence outside my concept" (1956 : 505). This is to say that I can easily imagine that there is a hundred thalers in my pocket; from the act of imagination there will not — unfortunately — be a hundred thalers in my pocket.

One of Kant's fundamental insights was — and Frege and his followers whole-heartedly agreed as well — that from the logical structure of language we cannot tell what exists and what does not because language will endow everything with what I call mention-existence. Looking at the logical structure of language, or the meanings in language, or the grammar of language, or at anything in language will not decide for me whether the things I talk about exist in reality or not. Bertrand Russell put this insight in the following way: "In one sense it must be admitted that we can never *prove* the existence of things other than ourselves and our experiences. No logical absurdity results from the hypothesis that the world consists of myself and my thoughts and feelings and sensations and everything else is mere fancy" (1976 : 10). No wonder that lots of philosophers decided that the material world is only my idea — but I will not go into that. The important thing to see is that existence is not a predicate and nothing in language decides whether something does exist in the external world or not. Therefore, from Kant's argument against Descartes it does not follow that "God does not exist". What follows is that with the existence of God (and, I wish to claim, with the existence of anything) we are not in a knowing relationship: God's existence is something we cannot decide about on the basis of knowledge. One of the fundamental problems of Western philosophy has been that it put knowledge on the highest pedestal among the human faculties, and philosophers tended to discard things we do not know but rather feel, intuit, surmise, (aesthetically) appreciate. However, this question cannot be pursued here any longer.

Identity, names, "essences"

How about identity? Kripke claims that to deny that people or things are identical with themselves is a logical contradiction (1980 : 53). This sounds difficult but only until we think of identity as one of the "properties", "qualities", "attributes" of a thing, ie until we think about identity as if it were a predicate, something we state about an object. But why is it proper names that — as Kripke claims — are most likely to become rigid designators? I may also put the question this way: why was it proper names

through which Kripke encountered the identity–problem? Because proper names are more typical of naming *particular* beings (persons or things) than other words. Particularity is one of the most important "features" or "characteristics" of identity; "feature", or "characteristic" is, I admit, not the most fortunate term because identity is something, as it will become perhaps clearer below, that cannot be analysed any further. Let us say that particularity "goes along" with identity: identity is always particular. But the problem is that, on the one hand, practically anything can be a carrier of identity. On the other hand, the fact that a proper name is expressive of identity is often shrouded, veiled by several factors.

Practically anything can be expressive of identity because unfortunately anything can be used as a proper name and, thus, become a rigid designator: Kripke at one point acknowledges even demonstratives like *this* or *that* as potential rigid designators (cf 1980 : 49). Very confusingly, even descriptions like "the Avon of Stratford", or "the author of *Hamlet*" can be used as proper names (I think it was precisely this that confused Strawson and others). Further, genuine proper names may sound or look like descriptions: we may think of the great Native American chief, Sitting Bull, or the chief of the Blackfoot tribe, The-One-Who-Carries-The-Pot or, in the *Harry Potter*-saga, the evil magician, Voldemort is also called You-Know-Who and even He-Who-Must-Not-Be-Named (a nice rigid designator for Kripke!). *Even* Voldemort ("[who] wish[es] [the] death") is a "speaking name" for those who know some Latin. It is also very true that eg John Smith is the name of lots of men in the English-speaking world: one (relatively common) proper name may pick out several individuals. These factors all give less chances to us to see Kripke's point but he does not insist on this or that form of a name; what he insists on is that there is a point when, with a rigid designator, which is often a proper name, we give expression to the identity of a person or thing.

The Kripke-thesis runs as follows (although not with Al Pacino but with Richard Nixon): proper names like Al Pacino are rigid designators, for although the man (Al Pacino) might not have been several things (he might have not become an actor etc), it is not the case that he might not have been Al Pacino, ie identical with himself (cf Kripke 1980 : 49). He of course might have been called something else, had his parents called him otherwise or had his father's surname been something else, or had we another culture where children do not usually inherit their father's surname.[7] Kripke's point is that we need something which is expressive of the necessity of the

[7] Illegitimate children usually inherit their mother's surname but Al Pacino was not an illegitimate child.

identity of a thing or person, once that thing or person has been identified. And again it might even be a contingent fact of the world that we identify things and persons through names.[8] But it is precisely identity itself, more precisely that an object or person is identical with itself (herself, himself), which we need in order to attribute anything to it at all, to describe it, to give it qualities (after identity has been "established").

It has often been suggested that Kripke thinks rigid designators are somehow anchored in essential properties of things: that in a proper name, earlier than the naming, some essential properties of the named object or person are "dormant" or, later than the naming, some essential properties "get coded" in the name and Kripke thinks it is through being attached to essential properties that a rigid designator becomes rigid (cf eg Soames 2003 : 336 and 347–357). But Kripke openly denies this: "Some properties of an object may be essential to it, in that it could not have failed to have them. But these properties are not used to identify the object in another possible world, for such an identification is not needed. Nor need the essential properties of an object be the properties used to identify it in the actual world, if indeed it is identified in the actual world by means of properties" (1980 : 53). Rigid designators (often proper names, with the above qualifications) do not "name" or "grasp" a "bundle of properties" in persons or objects. Objects or persons do have properties, of course, essential and accidental, ie properties without which they would not be what they are, and, in turn, properties without which they would remain what they are but are still characteristic of them. (That human beings have a heart seems to be an essential property of them, while the colour of their eyes is accidental.) But identity — like existence — is not a characteristic feature, or quality, or property of a thing or person we may predicate of it, or him, or her, either as an essential, or as a an accidental "attribute". If it were—and this is Kripke's ingenious insight, I think—it would be a piece of knowledge or belief *about* the thing or person, with respect to which we may be right or wrong, and thus it would be a contingent fact of the world that could have been otherwise. Yet that something or somebody is identical with itself, himself, herself is a necessary fact of the world (and of all possible worlds as well). Kripke's thesis seems to imply that — as we are

[8] Which implies, again, the non-negligible metaphysical questions asked above: is the fact that humans use language a contingent fact of the world as well? Would we have a concept of identity if there was no language, would we bother about it at all? This is tantamount to asking: is a world without language a possible state in which the world could have been?

not in a knowing relationship with existence — we are not in a knowing relationship with identity, either.

That "identity is not a predicate" does not, of course, mean that I cannot use *identical with* predicatively. That identity is not a predicate means that identity is not something I *attribute* to a thing or person as being among the other properties I *know*, rightly or wrongly, about the thing or the person. Or perhaps it should be said that I "know" identity in a very special sense, as I know that something "cannot and could not be otherwise".[9] But I suggest we reserve "know" to cases where we *can* go wrong. And eg "Shakespeare is identical with Shakespeare" is not such a case because the denial of this sentence is a logical contradiction (unless one means it as the scholar does on the pulpit but that was discussed above). That "Shakespeare is Shakespeare", or "Shakespeare is identical with Shakespeare" is, thus, not stating a fact about the world. It is a tautology, an analytic truth. And, as Wittgenstein said in the *Tractatus*: tautologies are "unconditionally true", they are "not pictures of reality" (4.462).

Identity: an example

Here is another example, based on Kripke (1980 : 47–51) to explain identity. I have *this* table I am writing on right now in front of me: this is a particular table. Now let us not ask: what could *a* table be in a possible world? We are talking about *this* table. I can physically grasp it, I can refer to it but I am not grasping or referring to an abstract "it": I am referring to *it* here and now. Could this table be red in a possible world? (In our ordinary world, it happens to be brown.) Of course. Could it be in another room (and here "another room" is taken as a "possible world")? Of course. Being red or being in another room are all attributes, qualities of an object. But it would still be *it*, *this* particular table which could be in another room or could be red, so could be in a possible world; even in the possible world I would be talking about *this* table. Here this *it*-ness, *this*-ness is expressive of the table's identity, something it cannot lose. The table must retain its identity in all possible worlds because it may change as many of its qualities as we like, we will still need identity, expressed as "this table" or "it", to be able to tell *what* has changed *with respect to it*. The table must have identity in order that it may have qualities (whatever these qualities may be); otherwise *what* has changed?

[9] As, I think — following Wittgenstein — that it is wrong to say that "I *know* I am in pain", or "I *know* I have hands". These are "closer" to us than we could "know" these, we are somehow "one" with our pain or our hands.

Undeniably, the problem is that *what* is notoriously ambiguous. To the question: *what* has changed? I can answer both: "the table", or "the table's colour". But it is *its* colour that has changed, and—here is Kripke's point—by *it* I can not only mean "one or other qualities of the table that have remained unchanged" but *it* can also refer to the table's identity, which is not one of the attributes. But let us suppose that I change all the attributes of the table: I cut it up into pieces, and make part of the floor of a room from it. Have I changed, with all the attributes, the identity of the table as well? If I say yes, then *what* is it all the attributes of which I have changed? I have changed the identity of *the table* which was so-and-so, and have created a new identity I am expressing with another name, *namely,* "floor", which again has all sorts of properties. Of course we identify things, so "this table", too, through its qualities. But, for Kripke, these qualities are not the bundle that gives the thing identity. Qualities rather "hide" the fact that there is "something", perhaps "in" the object which is separate and strictly different from all qualities and makes it identical with itself. What is that "something"? It seems as if we were looking for the "soul" of the object, which "flickers" dimly inside, like the flame of a candle, making the thing what it is. But *what* makes an object what it is, is still not its identity: it is its essential qualities. Yet essential qualities are still qualities and identity is not a quality. Identity is something the object will have until I call it by the name I have learnt about it. The name—as we saw—in its form, as a part of language is arbitrary with respect to the object. But it is precisely with respect to the thing's "nature" (its qualities etc) that a name is arbitrary. It is true, as I have already pointed out, that there is nothing in the nature of the thing that would predestine that the object should be called this or that. Even motivated names, eg metaphors will carry a fair amount of arbitrariness. There is motivation behind calling the lowest part of a mountain the "foot" of the mountain but there was nothing necessary about the metaphorical extension going this way: perhaps the "saucer" of the mountain, or the "sole" or "toes" of the mountain would also do. There is nothing necessary about seeing, even by a whole speech-community, some analogical relationships which can become the basis of metaphors. If a boy is named after his father, we can see the motivation quite clearly but the decision is not a necessary one: the parents could have decided otherwise; nothing compelled them to name the boy after his father with the force of necessity.[10] And the same name can be used to fix the identity of several people (this follows from the very fact that names are arbitrary). The name

[10] The problem of rigid designators involves the problem of free will and determinism, too but here these cannot be dealt with.

is not expressive of the thing's "nature": it is expressive of its identity (perhaps this is exactly why names are arbitrary). The name fixes the thing for us so that we may identify it as such and such, yet for Kripke identification comes "first" and "then" comes the list of attributes. To speak about what comes "first" and "later" is not a historical, chronological account: identity is so notoriously difficult to talk about because all these happen in "one moment": the naming and the possible realisation of the thing's attributes. As for Kripke, this fixing, this designation, this naming (not only in the act of baptism but also when I use a name for reference later on) and the identification of the thing comes about in the same moment as well: one cannot be without the other (cf 1980 : 96). Once an arbitrary name has become the name of the object, it necessarily fixes its identity, or else I use a different name because I have — or I think I have — identified a different thing.

Logical form and identity: Wittgenstein and Kripke

Then what is identity? What is that "something" which is perhaps "in" the object as its "soul"? Identity is so hard to grasp — in fact, to *identify* — because it is not a thing; if it were, we would have a firm grip on it and get to know it. Identity is a referential relation which we seem to take for granted when we use a name. Identity, I would like to claim — and this again is purely my claim — is part of our logical attitude to the world.

To make this clearer I would like to point out some significant similarities in Kripke's conception of logic and Wittgenstein's standpoint in the *Tractatus*, although Kripke has often been used to repudiate Wittgensteinian insights (eg cf Soames 2003 : 13–15). Among other things, the very term *rigid* designator points towards some affinity between the two positions. Both Kripke and Wittgenstein seem to hold that it is logic, or, more precisely, the logical structure of language which contains some fundamental, unshakeable, unalterable, unconditional truths with absolute and necessary certainty, yet these truths are precisely not facts of the world and not facts we "know" because in the world nothing is unalterable; in the world everything could be otherwise: everything could be true *or* false and thus these "absolute" truths are not part of the world. For Kripke, it seems to me, such an unalterable truth is that things and persons are identical with themselves, for Wittgenstein, in the *Tractatus*, among other things such an absolute truth is that there is a logical structure (logical form). Wittgenstein even says that the logical structure of language and of the world cannot be talked about: it remains in the realm of the ineffable, the unsayable, the inexpressible but this does not mean that there is no logical structure as it is not the case that what cannot be talked about would be unimportant or

non-existent; on the contrary: it is what we hold to be most precious that lies in the domain of the ineffable. Logical structure is not something we can put into words and further analyse or interpret with language, either.[11] I interpret Wittgenstein's logical structure in the *Tractatus* as our very *attitude* to the world, to the world around us, it is our constant and unalterable way in which we *relate* to the world. To put logical structure, ie our logical relation to the world into words in order to, for example, comment on it would require another standpoint than the one we have, namely a standpoint from which we could see and scrutinise our very attitude. But this attitude is a *part* of us (it is a pair of irremovable spectacles everyone has on their noses, as it were): we always already relate to everything with this very attitude, we cannot get, so to speak, "before" it so that we may then comfortably compare, from the "outside", this attitude and the world as two independent phenomena.[12]

I would like to interpret Kripke's notion of identity as part of the logical attitude Wittgenstein, I think, talks about: epistemologically, we do not have a hold, a firm grip on identity – I mean identity *itself,* the *very relation* that eg a person is identical with her- or himself — because we are not in a knowing relationship with it: if we express it, we express it in a tautology, leaving the whole of logical space open; identity is not something we could analyse any further because it is something with respect to which we analyse everything else. Thus, it appears to us as tautological, and, hence, as trivial but trivial things seem to be the most evident for us; they *literally* "go without saying". Ontologically, however, it is an unshakeable part of our being in the sense that it is, so to speak, a part of our primary, instantaneous relation to the world, a relation we always already take for granted. Thus, identity is not "in" the things or persons but rather "in" us as part of the way we logically relate to the world. Identity can be put on display — in the form of tautologies — but cannot be further analysed and — as Wittgenstein proposes it in his "Lecture on Ethics" — we can only resort to similes and allegories to *illustrate* them (cf Wittgenstein 1993 : 42).

[11] Cf "Propositions can represent the whole of reality, but they cannot represent what they must have in common with reality in order to be able tot represent it — logical form. I order to be able to represent logical form, we should have to be able to station ourselves with propositions somewhere outside logic, that is to say outside the world. " (*Tractatus,* 4.12) "Propositions cannot represent logical form: it is mirrored in them. What finds its reflection in language, language cannot represent. What expresses *itself* in language, *we* cannot express by means of language. Propositions *show* the logical form of reality. They display it. (4.121) "What *can* be shown, *cannot* said" (4.1212) (emphasis throughout original).

[12] On the *Tractatus* see further Kállay (2012)

I propose that our relation to identity (which is a relation itself) is similar to being absolutely determined or convinced about something, "somewhere deep down inside", for example — somehow — "in our guts", something which will never and nowhere change in us, come what may; this is why I consider rigidity in the term *rigid designator* such a fortunate metaphor.

I think with identity Kripke revived something very significant in philosophy. He revived, among other things, the Kantian insight that with lots of things we are not in a knowing relationship and the Wittgensteinian insight about the nature of necessary or absolute truths: that there *are* such truths yet they can only be necessary if they are not "reached by language" which could thematise, interpret, or analyse them because if they were, they would cease to be necessary truths, since language can only thematise things about which we may disagree, which can be true or false. (Let me make this clear: a tautology does not thematise, or interpret, or "analyse" identity; it expresses it, it puts identity on display). And, at the same time, and very curiously, these ineffable truths are the ones on which we build when we relate to the world, for example when we wish to get to know the world, when we talk, when we do anything.

Identity and existence (being)

Most of the ideas that follow may sound weird; the best is if they are treated as indices of the various directions I would like to go with the problem of identity and, of course, meaning; the two are inseparable.

I take it to be a wonderful gem of wisdom that the Old Testament author, whoever he was, put this sentence into God's mouth when Moses asks about God's name: "I am that I am", a tautology.[13] I take this to be expressive of the insight that, first of all, the *name* of God is nothing else but He stating His identity with Himself, which is, at the same time, a necessary truth. Second, if God is the Lord of creation, ie that He is the source of all beings — as I think the Old Testament author believed this to be the case — then identity *is* being, and also the source of being. I do not wish to raise theological issues, I am merely asking: is it possible, now philosophically, that identity *precedes* being, that is, existence (as the Biblical author seems to imply)? When philosophers, such as Heidegger,

[13] "And Moses said unto God, Behold, when I come unto the children of Israel, and shall say unto them, The God of your fathers hath sent me unto you; and they shall say to me, What is his name? what shall I say to them? And God said unto Moses, I AM THAT I AM: and he said, Thus shalt thou say unto the children of Israel, I AM hath sent me unto you" (Exodus 3:13–14).

wrestled with the problem of being, they insisted that the problem of being should be understood from being itself. Yet could it be that, following the Kripkean and Wittgensteinian path, we could approach the question of being through identity?[14] It seems to me that identity includes the question of being and not the other way round. Or let me put it this way: when we identify something then, with the same stroke, we grant it being as well, identity being the "source" of being, as it were. Perhaps our most fundamental, non-predicative but logical relationship with the world is not being, but identity (which is, as I have tried to argue, not a predicative relation, either).

Personal identity

How does Kripke's insight that the name is expressive of the identity of a particular thing or person relate to personal identity? Paul Ricœur, who wrote a whole book on personal identity (Ricœur 1992), distinguishes between identity in the sense of *sameness* on the one hand, and *selfhood identity* on the other. Sameness is eg that I consider myself to be "the same" as I was yesterday; Ricœur calls this *idem*-identity. Selfhood-identity, called *ipseity* by Ricœur, is to mean that I am an autonomous, unique self precisely not identical with anybody else. I am not completely identical even eg with my yesterday's self, so this is the self which is capable of changing. It is *ipseity* which is capable of recognising him-or herself in the Other too; it is the self as *ipseity* who realises that his or her identity is, at least partly, given in other people, as if others were "mirrors" of the self. Ricœur—who otherwise was one of the few Continental philosophers who built insights coming from the so-called Analytic, Anglo-Saxon tradition into his thinking, too—does not mention Kripke in this book but he does use Strawson's theory of identity and even the *Tractatus* appears at one point (cf Ricœur 1992 : 539) . Yet I do not think that some of Kripke's and Ricœur's insights would not be compatible; they might even be mutually fertilising. Much depends on to what extent we interpret Kripke's *rigidity* in designation, ie his insistence that the name is expressive of an identity the person cannot lose in any possible world. Should we say that, indeed, the rigid identification of identity is also expressive of one's uniqueness? It is, as I pointed out, precisely not the "bunch of essential qualities" of the human being "as such" which is in question; Kripkean identity, I think, can be interpreted precisely in terms of *personal* identity in the sense of uniqueness,

[14] At one point, Kripke says something very interesting: "Once we've *got* the thing, we know that it existed" (1980 : 29, emphasis mine).

identity being expressive of the fact that each and every personality is a non-repeatable, separate being, different from everyone else and it is in this uniqueness that congenial character, individuality (in which the self is true precisely to him- or herself) is anchored. This leads me to another question.

Granting identity on the basis of personal identity (selfhood)

Could it be that names are expressive of identity because, in one way or another, we *grant* identity to everything and this granting is based on our very awareness of our selves? Let me put it this way: when we grow conscious of things around us, ie we are able to *reflect* on things, we are also capable of reflecting on our selves. When we become aware of the world, we also become aware of ourselves and *vice versa:* gaining self-consciousness surely goes hand in hand with growing conscious of what is "outside of us" ("over there, in the world"). I know this is a very difficult question and I will of course not go into it. But provided the above account is not too incredible, I would like to ask: is it possible that we grant identity to persons and things around us using ourselves, our identity, as a "model"? Granting identity might be further described as acknowledging the Other as a being and that he, or she, or it is a unique personality. Let me illustrate this in terms of a credit transaction: granting identity to the Other is like giving the Other a cheque which is already signed by me but the figure, the amount the Other can have access to, has been kept blank: *any* amount can be written there. The space for the amount is not filled in because I do not have access to the *content* of the Other's uniqueness but with the handing over of the cheque I grant, I acknowledge that he, or she, or it *is* unique. (As I am far from "knowing myself", too but I am aware that I am unique, I am like nobody else.)

Self-identity and lending one's identity: identification with fictitious beings

What happens to my identity when I read a novel, watch a play or film, etc, and, as we say, I *identify*, more or less, with one or more of the characters? Let us take the perhaps crudest case: when an actor (here I will stick to a "he") personifies somebody on the stage. The age-old question is: does the actor, lending his identity to, say, Hamlet, lose his personal identity *while* he is Hamlet because for three hours he is not, say, Lawrence Olivier but

Hamlet? And how about the identity of Hamlet himself, the role, the role being, after all, first and foremost a text? But the text implies movement, postures, gestures, etc. So is then Hamlet all *these,* ceasing to exist when he is not personified? Or is Hamlet's identity anchored in the text and/or the person reading the text? Or was it Shakespeare who gave identity to Hamlet when he *named* him Hamlet? But we know that Hamlet already existed in Danish chronicles: was it Saxo Grammaticus, author of "the first connected account of the hero whom later ages know as Hamlet" (Jenkins 1982 : 85), in his *Historia Danicae*, who identified Hamlet (with, in fact, not the name "Hamlet" but "Amleth")? However, Saxo wrote his piece at the end of the 12th century but it was only published for the first time in 1514. Does Hamlet have an identity from the end of the 12th century, from 1514, or from 1600 when (most probably) Shakespeare wrote *Hamlet* (cf Jenkins 1982 : 85–86)? Or is naming a fictitious character a different business than naming a real being? But what if Saxo considered Hamlet to be a historical, ie "real" figure?

From the point of view of the actor we may perhaps claim that if we treat the stage or drama as a "possible world", then, on the basis of Kripke's famous dictum, we should say that the person personifying Hamlet does not lose his identity while he is Hamlet; he will remain eg Lawrence Olivier for those roughly three hours he needs in order to act Hamlet out. But how does his identity, now in the sense of uniqueness, relate to his interpretation of the role? Will his uniqueness be the "core" of *Hamlet's* identity? I think acting differs from granting identity in the fact that acting is also *lending* identity. But how is that done? And does not the author, or even the viewer, or reader lend *some* of his or her identity to Hamlet?

Philosophers often like to treat the problem of fiction, acting etc as something totally different from everyday life, hence willy-nilly implying that what happens in fiction, on the stage etc, cannot inform the questions we are concerned with in real life and, thus, in philosophy. I do not think this would be true. At least some of the things that happen in fiction and at least some of the ways in which we relate to fiction may help us to genuinely philosophical insights and are applicable in everyday life as well. If we consider this question from the point of view of the author, we may find that the author of the fictitious character named Hamlet, did, I claim, exactly the same thing we do when we name a real person. When the — arbitrary — name "Hamlet" became the name of Hamlet the character, the name became expressive of Hamlet being identical with Hamlet. Yet — and here I think there is some benefit for philosophy from fiction — the case of the author naming a fictitious character makes it more obvious, the case of the author displays more perspicuously, what we do in "real life". We

say the author *creates* his characters, hence the author creates their identity, too. But do we not do exactly the same thing with "real-life" characters as well? I offer the following analogy: if I child is taken from an orphanage, it is obvious the child was adopted. But is it not also true that parents have to adopt even their "natural" (biological) child (and, as a matter of fact, the child his or her parents)? Fiction, in this analogy, plays the role of the orphanage: fiction only sharpens, magnifies or amplifies what the case in "real life" happens to be. We do not only see ourselves, as in a mirror, in the Other. We are also creators: creators of the identity of the Other, including fictitious characters.

Closing

Identity seems to me to be a battlefield where ultimately only questions remain standing. One last of these may be put this way: is the author of a text identical with his text? Am I identical with the text you have read? Am I identical with the text's *meaning*? I would say no; the text may be *typical* of, but not identical with, the author. But please read below a very short text, made up of only two words, which, even for Kripke, is expressive of my identity; here it is, with all my gratitude for your having read all this above:

Géza Kállay

REFERENCES

Bowie, Andrew. 2003. *Aesthetics and subjectivity: from Kant to Nietzsche.* 2nd ed. Manchester and New York: Manchester University Press.

Donnellan, Keith. 2001 [1966]. Reference and Definite Descriptions. In: A. P. Martinich (ed.), *The Philosophy of Language*. New York: Oxford University Press. 247–259.

Dummett, Michael. 2001. Gottlob Frege. In: A. P. Martinich and David Sosa (eds.), *A Companion to Analytic Philosophy.* Blackwell Companions to Philosophy. Malden, Mass., and Oxford: Blackwell Publishers Ltd. 6–20.

Frege, Gottlob. 1992 [1892]. On Sense and Reference. In: Michael Beaney (ed.), *The Frege Reader.* Oxford: Blackwell. 150–180.

Gadamer, Hans Georg. 2010 [1960]. *Warheit und Methode. Grundzüge einer philosophischen Hermeneutik* [Truth and Method. The Basics of a Philosophical Hermeneutics]. Gesammelte Werke. Band 1. Heremeneuik I. Tübingen: Mohr Siebeck.

Heidegger, Martin. 1951. *Sein und Zeit* [Being and Time]. Seventh ed. Tübingen: Max Niemeyer Verlag.

Heidegger, Martin. 1981. *Erleiterungen zu Hölderlins Dichtung* [Explanations for Hölderlin's poetry]. In Heidegger *Gesamtaufgabe. I. Abteliung: Veröffentliche Shriften 1910–1976. Band 4.* Frankfurt Am Main: Vittorio Klostermann.

Jenkins, Harold (ed.). 1982. William Shakespeare: *Hamlet.* The Arden edition. 2nd series. London and New York: Methuen.

Kállay, Géza. 2012. Nonsense and the Ineffable: Re-reading the Ethical Standpoint in Wittgenstein's *Tractatus. Nordic Wittgenstein Review* 1 : 103–130.

Kant, Immanuel. 1956 [1787]. *Critique of Pure Reason.* Trans. by Norman Kemp Smith. London and New York: Macmillan and Co. Ltd. and St. Martin's Press.

Kripke, Saul. 1980. *Naming and Necessity.* Cambridge: Harvard University Press.

Lewis, David K. 1968. Counterpart Theory and Quantified Modal Logic. *Journal of Philosophy* 65 : 113–126.

Quine, Willard Van Orman. 1963. Two Dogmas of Empiricism. In: Quine *From a Logical Point of View.* New York and Evaston: Harper and Row. Harper Torchbooks. 20–46.

Ricœur, Paul. 1992. *Oneself as Another.* Trans. by Kathleen Blamey. Chicago and London: The University of Chicago Press.

Russell, Bertrand. 1976. *The Problems of Philosophy*, Oxford: Oxford University Press.

Russell, Bertrand. 2001 [1905]. On Denoting. In: A. P. Martinich (ed.), *The Philosophy of Language.* New York: Oxford University Press. 212–220.

Searle, John R. 1958. Proper Names. *Mind* 57 : 166–173.

Soames, Scott. 2003. Saul Kripke on Naming and Necessity. In: Soames *Philosophical Analysis in the Twentieth Century. Vol. 2. The Age of Meaning.* Princeton and Oxford: Princeton University Press. 333–456.

Strawson, Peter. 1959. Persons. In: Strawson *Individuals.* London: Methuen. 87–116.

Strawson, Peter. 2001 [1950]. On Referring. In: A. P. Martinich (ed.), *The Philosophy of Language.* New York and Oxford: Oxford University Press. 228–242.

Wittgenstein, Ludwig. 1961 [1921]. *Tractatus Logico-Philosophicus.* Trans. by David Pears and Brian McGuinness. London: Routledge.

Wittgenstein, Ludwig. 1993 [1929] A Lecture on Ethics. In: James Klagge and Alfred Nordman (eds.), Ludwig Wittgenstein *Philosophical Occasions, 1912–1951.* Indianapolis and Cambridge: Hackett Publishing Company, 1993. 37–44.

Wittgenstein, Ludwig. 2001 [1951, 1958]. *Philosophical Investigations.* The German text, with a Revised English Translation, trans. by G. E. M. Anscombe, Malden, Oxford, Carlton: Blackwell Publishing Ltd.

Géza Kállay
kallay@ucsc.edu
Eötvös Loránd University
Budapest

A katakretikus jelentésbővülésről — adalékok a jelentésváltozás tropológiájához

Bollobás Enikő

Varga Lászlónak szeretettel

A jelentésváltozás alakzati formái között minden bizonnyal a metaforikus a leggyakoribb. Ezekben az esetekben az újító nyelvhasználó a meglévő, már ismert tárgyakkal, jelenségekkel vagy fogalmakkal való hasonlóságot aknázza ki, s a mindenki számára ismert jelentést — a hasonlóság alapján — az ismeretlenre vetítve bővíti. Efféle metaforizáció terméke a számítógépes és internetes kultúra számos terminusa, így például az *egér* és a *kukac,* amelyek a számítógép melletti eszköz és a kamrában szaladgáló rágcsáló, illetve az emailcímekben használt @ jel és az almában lakó kis féreg hasonlósága okán kapták metaforikus nevüket. Hasonlóképp metaforikus jelentésbővüléssel jött létre a *login* kifejezés, amely a hajónapló és a számítógép belső „naplója" közti hasonlóság okán lett kiterjesztve egy új, azelőtt ismeretlen műveletre, a számítógépes rendszerbe — a számítógép „hajónaplójába" — való belépésre. És metaforikusak a *szörfözés* és *navigálás* kifejezések is, amelyek a világhálót valamiféle végtelen óceánként konceptualizálják.

Ám az új jelenségek és fogalmak megnevezésének van egy másik módja is, a katakretikus, amelyről mintha megfeledkezett volna a nyelvtudomány.

A metaforával közeli rokonságot mutató katakrézis *(katakhrészisz, abusio)* a klasszikus retorikában egyaránt jelent képzavart és helytelen szóhasználatot. Míg a metafora konstitutív műveletei a (hasonlóságon alapuló) helyettesítés és a kettőzés (a konkrét/szó szerinti megkettőzése a figuratívba), a katakrézis retorikai művelete a kibővítés, illetve kiterjesztés, amelynek során egy meglévő kifejezés jelentéstartományában egy új jelentés kap helyet, amelynek mindaddig nem volt nyelvi helye. Erre utal Beda

Venerabilis, aki szerint a katakrézis esetében „a szót vagy kifejezést olyan dolognak a megnevezésére használjuk, amire nincs megfelelő szó" (Szathmári 2008 : 13). Az alakzat e jegyét emeli ki a 19. századi francia retorikus, Pierre Fontanier is, aki a katakrézis lényegét abban látja, hogy itt egy kifejezés két ideához is hozzá van rendelve: egy „előbbi eszméhez" és egy „új eszméhez", amely utóbbinak korábban nem volt saját kifejezése (1977 : 213). A katakrézis tehát olyan alakzat, amely egy meglévő szó jelentését egy új, korábban nem létező fogalommal bővíti.

Modern, strukturalista megközelítésben a katakrézis mindenekfölött a nyelvi jel rendszerszerűsége mentén szerveződő trópus. Saussure megfogalmazását kölcsönvéve elmondhatjuk, hogy akár a nyelvi jelet, a katakrézist is „éppen az hozza létre, ami megkülönbözteti" (1967 : 154). A katakrézisben is „csak *különbségek* vannak", akár — Saussure szerint — a nyelvben (153). Miként a szavaknak sem az „a feladata, hogy eleve adott fogalmakat tükrözzenek" (149) vagy „ábrázoljanak" (146), a katakrézis sem adott jelölt vagy létező fogalom kifejezését adja. S miként a saussure-i nyelvfelfogásban a nyelvi rendszer „hangbeli különbségek sora" (153), úgy a fogalmi rendszer fogalmi különbségek sorából épül fel. Ekként lesz a katakrézis a nyelvi retoricitás látványos alakzata — azé a retoricitásé, amelyet Charles Sanders Peirce nyomán a dekonstrukció oly élesen különválaszt a grammatikusságtól. Ehhez a peirce-i nyelvfelfogáshoz nyúl Paul de Man nevezetes „Szemiológia és retorika" című esszéjében, ahol rámutat: „[a] jel értelmezése [. . .] nem a jelentés, hanem egy másik jel, egy olvasat és nem dekódolás, és ez az olvasat újra csak egy másik jelben kell értelmeződjék és így tovább a végtelenségig" (de Man 1991 : 119). Ebben a felfogásban tehát „a jel nem az a dolog, hanem a dologból — az itt reprezentációnak nevezett folyamat által — származtatott jelentés" (119).

A katakrézis fenti két jellemzőjére — a nyelv rendszerszerűségének és a nyelvi retoricitásnak a kiaknázására — épít a posztmodern, ill. posztstrukturalista retorika, amikor a katakrézist teszi meg retorikai vizsgálódásai egyik középponti trópusává. A már idézett de Man szerint a katakrézis egyike azon „kevert módozatoknak", amelyeknek „hatalmukban áll a legfantasztikusabb létezők létrehozása a nyelvben rejlő helyzeti potenciál erejénél fogva"; ezek a „valóság szövetét a legszeszélyesebb módokon képesek szétbontani és újraszőni" (de Man 2000 : 17). A katakrézis, állítja Jacques Derrida, „bizonyos jelnek olyan értelmű kikényszerítésére [vonatkozik], amely értelemnek a nyelvben ezidáig még nem volt saját jele" (1994 : 36). Michel Foucault a szinekdoché és a metonímia mellett „a retorika három nagy alakzata" közé sorolja a katakrézist (2000 : 137), és rámutat, hogy esetében jelentések helyváltozásáról és kimozdításáról van szó, ami — minthogy a szerző azelőtt soha ki nem mondott dolgokkal tölti ki

az üresen maradt nyelvi helyeket — változást hoz a dolgok fennálló rendjében (Foucault 1986 : 16).

Valójában nem is másról van itt szó, mint az „el-különböződésről" (*différance*), amelyet Derrida a „fogalmiság, a fogalomalkotás" játékának nevez (1991 : 49). Az el-különböződést — mint írja — nem lehet „a »jel« fogalmán belül megérteni, amely mindig a prezencia reprezentációját (megjelenítését)" jelenti (48). Hasonlóképpen a katakrézist sem lehet a „prezencia reprezentációjaként" leírni: nem lévén a nyelven túlra mutató, sem analógiára és kettőzésre épülő alakzat, a katakrézis nem tekinthető a jelenlét megjelenítésének, vagyis annak újra felmutatásának, ami jelen van. A katakrézis a jelek láncolatában működő saussure-i különbségek között mozog — mindig elhalasztódva, eltolódva, mindig „eredet" nélkül, mindig játékosan.

A katakrézis tehát nem analógiára (hasonlóságra, megfeleltetésre) és helyettesítésre épül, hanem a jelentésbővülés nyelven belüli folyamataira. A metaforával ellentétben a katakrézis nem jelölt–jelölő, hanem kizárólag jelölő–jelölő viszonylatokban (azaz a kiterjesztés, elcsúsztatás, helyváltoztatás–kimozdítás viszonylataiban) működik. Egy létező kifejezés egy mindaddig nem létező jelentéssel gyarapodik, mégpedig úgy, hogy az alakzat mindvégig a jelölő szintjén marad.

Az egyre táguló fogalmi rendszerben a katakrézis lesz az új fogalmak és jelenségek megalkotásának az eszköze; mindazoké, amelyekre azelőtt nem volt kifejezés, elnevezés, név, szó a nyelvben. Tehát valójában nemcsak a kifejezés nem létezik még, hanem a fogalom sem; még maga a konceptualizáció sem történt meg. E folyamat hordozója lesz a katakrézis, amelyet Derrida ekképp „bizonyos jelnek a jelölőjétől megfosztott gondolatba, illetőleg értelembe való jelentéstágító betöréseként" határoz meg (1994 : 36).

Lássunk most néhány példát a katakretikus jelentésbővülésre. Ahhoz, hogy tudjuk, hol keressük a katakretikus jelentésbővülés példáit, figyelembe kell vennünk az alakzat fent leírt jellemzőit. Először is azt, hogy a katakrézis egy meglévő szó jelentését oly módon bővíti egy új fogalommal, hogy közben nem hagyja el a jelölők világát. Másodszor azokat a jellemzőket érdemes figyelembe venni, amelyet Foucault és Derrida fogalmazott meg a korábban idézett megállapításokban. Vagyis hogy a nyelvi invenció egyik legfőbb eszközének számító katakrézissel a beszélő az „azelőtt soha ki nem mondott dolgokat" nem új szavak megalkotásával mondja ki (vagyis az új jelöltnek egy új jelölővel történő megfeleltetésével), hanem a jelentések „helyváltozásával" és „kimozdításával" (Foucault 1986 : 16); továbbá hogy nem lévén a nyelven túlra mutató alakzat, a katakrézis nem

a jelenlét megjelenítésére törekszik: nem kívánja azt felmutatni, ami jelen van (Derrida 1991 : 49).

Más szóval az alakzat úgy reflektál a dolgok fennálló rendjében létrejött változásra, hogy eközben el is kerüli a dolgok új megnevezését, amennyiben egy meglévő kifejezésben ad nyelvi helyet az új fogalomnak. A katakrézis legnagyszerűbb példáit mindenekelőtt az irodalomban találjuk, amely a nyelvi-fogalmi újítás elsődleges terepe.[1] De az emberek nemcsak művészi ambíciójukat élik ki a katakrézisalkotással: gyakran vannak társasági-udvariassági és politikai-ideológiai okai annak, ha a beszélők ezt a trópust alkalmazzák. Jelen tanulmányomban a politika és a politikai irodalom területéről merítem az elemzéseimet alátámasztó példákat.

A katakretikus jelentésbővítés gazdag példatárát szolgáltatják a diktatúrák: totalitárius rendszerekben a hatalom gyakorlói (ágensei vagy szubjektumai) és az elnyomó hatalom áldozatai (páciensei vagy objektumai) egyaránt élnek a katakrézis nyújtotta szándékos félrevezetés vagy kényszerű elhallgatás eszközével.

Kertész Imre több esszéjében is ír arról, amit a 20. század egyik legsúlyosabb eseményének tekint: hogy az ember „az ideológiák ragályával megfertőzte és szerfelett veszélyessé tette a nyelvet" (2001 : 96). Úgy vélem, hogy amikor Wittgensteint idézve Kertész is bizonyos szavak időről időre történő kivonását sürgeti—„beadni [a patyolatba], hogy kitisztítsák" —, a katakretikus jelentésbővítés visszafordítására gondol, a totális diktatúrák által a szavakhoz rendelt új tartalmak megvonására. Kertész többek között a *haza* szót említi, amelytől — mint írja — azóta ódzkodik, hogy levente-foglalkozásokon, a deportálások árnyékában, sárga karszalaggal a karjukon „hazafias dalokat kellett énekel[niük]" (97). Vagyis amióta a *haza* jelentéstartományának része lett egy azzal inkompatibilis szemantikai elem, a zsidók deportálásának történelmi ténye. Másutt a náci *kulturális forradalom* kifejezést említi, amelynek mindkét elemét sajátos tartalommal töltötte meg a náci ideológia; vagyis míg a kifejezés első tagja „a kultúra perverz gyűlöletével volt átitatva", addig második tagjának jelentése „a náci emberkísérlet pokolbeli laboratóriumának" elemével bővül (19). Vagyis a *kulturális forradalom* kifejezés mindkét tagja katakrézis.

A száműzött nyelv című esszéköteten végighúzódik a diktatúrákban tapasztalható nyelvromlás felett érzett felháborodás: „az értékdiktatúra [. . .] mindenekelőtt *nyelv*" — hangzik frappáns megállapítása. A Kertész által említett példák között szerepel a *Holocaust* kifejezés is, amelyről elmondha-

[1] Több helyütt részletesen írtam azokról a folyamatokról, amelyek mentén a katakrézis az irodalmi szöveget szervezi, pl. Bollobás 2010, 2012.

tó, hogy szintén katakretikus jelentésbővüléssel fogadta magába a vészkorszak, illetve a megsemmisítő táborokban folyó népirtás szemantikai elemeit, kitágítva annak eredeti („égő áldozat") jelentését.[2] Kertész a *Holocaust* példáján keresztül követi végig azt a folyamatot, amelynek során a diktatúrákban a dolgok nevén nevezése helyett a dolgok elfedése történik, amikor a „brutálisabban hangzó" kifejezéseket a szörnyűségek „stilizálása" váltja fel. Éppen ez történik a *Holocaust* kifejezéssel is, amely a maga „finomkodóan absztraháló" és stilizáló módján a *megsemmisítő tábor* és *Endlösung* kifejezések brutalitását hivatott tompítani (2001 : 241–242). Kertész pontosan azt tartja elfogadhatatlannak, amikor a fennkölt és elvont „égő áldozat" jelentéselem nem felidézi, hanem inkább elfedi a valóságot, a „felfoghatatlan szenvedést és gyászt" (241), hogy „a napi tömeggyilkosság, az elgázosítás, az agyonlövések rutinjának, az Endlösungnak, az ember-megsemmisítésnek a szinte szakrális fedőneve" lett (282). Mindez pedig — sugallja Kertész — egybecseng a Holocaust terhétől való szabadulás igyekezetével (242).

A diktatúrák nagy hazugsága nyelvi jellegű — állítja Kertész (2001 : 278). Hozzátehetjük: az, amit „totális nyelvnek" nevez — vagyis a totális diktatúrák által létrehozott nyelvhazugság — nyelvészeti értelmezésben nem más, mint katakretikus jelentésbővüléssel kreált és egyúttal elfedett fájdalmas igazságok sora. Jó példa erre a Kertész által említett eset, amikor „a totalitárius állam [alkotmányában . . .] demokratikusnak [. . .] deklarálja magát" (26). Itt a *demokrácia* és a *demokratikus* kifejezések katakretikus bővülésük révén magukba foglalják a *demokrácia hiánya* és az *antidemokratikus/diktatórikus* jelentéselemeket is.

A magyarországi sztálinizmus is nagy nyelvi leleménnyel szorította bele szörnyűségeit látszólag semleges jelentésekbe. Jó példa erre a *realizálás,* amelyről — mint Szász Béla írja — az Andrássy út 60-ban mindenki pontosan tudta, hogy mit jelent: az ÁVH által már meghozott ítélet utólagos megalapozását, amellyel a vádat igazolták. „*Realizálnia* kell a papírlap állítását [. . .] tehát kiviteleznie a verdiktumot olyképpen, ahogy a pallér kivitelezi az építész elgondolását" (1989 : 116). A *realizálás,* Farkas Mihálynak ez az invenciózus katakrézise egyaránt jelentette a fogoly megtörését, a másokra terhelő vallomás kicsikarását, a kényszerrel kicsikart vallomás kerek egésszé alakítását, majd a műper főtárgyalásának előkészítését (119–120). Szász több más jelentésbővülésről ír, amely az ÁVH belső szóhaszná-

[2] Megjegyzendő, hogy míg a *Holocaust* katakrézis, addig az *Auschwitz* a szinekdoché alakzata mentén bővülve vonatkoztatható a megsemmisítő táborok összességére, illetve metaforikus jelentésváltozás révén vonatkozhat a táborokban folyó általános népirtásra.

latának volt a része, így például a *kapcsolat*ról és a *lényegileg* szóról. A *kapcsolat* az ÁVH belső szótárában olyan katakrézis, amely a kémkedés új jelentéselemét is tartalmazza: vagyis aki *kapcsolatai*ról vall, az kémtevékenységéről is vall. A *lényegileg,* amelyet Szász az ÁVH egyik kulcsszavának tekint, „áthidalta a puszta gyanúsítás és a főbenjáró vád közötti szakadékot" (128): vagyis a katakretikus jelentésbővülés a gyanú váddá válását építi be ebbe az egyébként ártalmatlan határozócskába.

A katakrézis sajátos változatát alkotják azok az esetek, amikor az új fogalom jelentése nem igazodik a befogadó kifejezés jelentéséhez—sőt, néha éppen ellentétes vele. A Rákosi- és a Kádár-korszak egyaránt bővelkedik az efféle nem igazodó katakretikus jelentésbővülésekben. Ebbe a csoportba tartozik a Kertész által említett *demokrácia* és *demokratikus* szavak mellett például az *erőszakmentes téeszesítés,* amely valójában minden volt, csak nem erőszakmentes, hiszen a gazdákat nyílt erőszakkal kényszerítették belépésre; a katakretikus jelentésbővülés ekként önmaga ellentét hozza a szó szemantikájába. Hasonlóképpen katakretikus a *szocialista erkölcs* lexikai parataxis, hiszen az *erkölcs* eredeti jelentésével az *erkölcstelenség* szemantikai elemét társítja (ezért mondták sokan akkoriban, hogy a *szocialista* valójában „fosztójelző", vagyis a fosztóképző szerepét tölti be a magyarban: mindent önmaga ellentétévé fordít). A példákat folytatva, az *árrendezés* valójában mindig áremelkedést jelentett, a *racionalizálás* elbocsátást, a *reorganizáció* pedig végfelszámolást.

Az Egyesült Államokban élő román író, Andrei Codrescu a diktatúrák elhazudó-elhallgató-félrevezető nyelvhasználatában látja az 1989-as romániai események egyik okát. Szerinte kiüresedtek az olyan kifejezések, mint *demokrácia, privatizáció* és *emberi jogok,* az embereknek elegük lett a hazugságokból, s a rendszerváltástól azt remélték, hogy végre nevükön nevezhetik a dolgokat (1991 : 11). Nem véletlen, hogy Codrescu kizárólag az *úgynevezett forradalom* kifejezéssel hajlandó utalni írásaiban a diktátor megdöntését célzó eseményekre. Ezzel éppen a Ceauşescu-rezsim nyelvszemléletét folytató katakretikus nyelvhasználatnak áll ellen, amely *forradalom*nak nevezte a lényegi változást nem hozó eseményeket, *demokrácia*nak a diktatúrát, *privatizáció*nak a kisajátítást és *emberi jogok*nak a jogfosztottságot.

A totális nyelv legismertebb példáit a politikát abszurdizáló irodalomban kell keresnünk. A George Orwell *1984*-éből ismert totális nyelv, *újbeszél* lényege, hogy a nyelvet is új alapokra helyező Párt új jelentéseket gyárt, mégpedig oly módon, hogy a meglévő kifejezések ismert jelentése mellé egy új, azzal gyakran ellentétes jelentést épít. Mint a regényhez csatolt Függelékben olvashatjuk, a szavak „majdnem pontosan az ellenkezőjét jelentik annak, amit jelenteni látszanak" (Orwell 2012b : 336).

A *Szeretet-minisztérium* ekképp Gyűlölet-minisztériumot jelent, az *Igazságminisztérium* Hazugság-minisztériumot (10), a *Minipax*, vagyis a *Béke-minisztérium* Hadügyminisztériumot (336). Másként fogalmazva, újbeszélben a nyelvújító totális hatalom a katakrézis alakzata mentén fordítja a jelentéseket önmaguk ellentétébe, az „x = nem-x" egyenletet használva a katakretikus bővítés képleteként. Ami óbeszélben a hazugság volt, az újbeszélben az *igazság* („*igazság* = nem-igazság [hazugság]"); ami óbeszélben kényszermunkatábor volt, az újbeszélben *gyönyörtábor* („*gyönyör* = nem-gyönyör [kényszermunka]"). A Párt jelmondatai is egytől egyig önmaguk ellentétébe csapó katakrézisok, mégpedig olyan konstrukciók, melyekben a háború, a szabadság és a tudatlanság újbeszélbeli definícióját nyújtó jelmondatok egyúttal a katakrézis alakzatának lényegi definícióját fogalmazzák meg (10):

A HÁBORÚ: BÉKE
A SZABADSÁG: SZOLGASÁG
A TUDATLANSÁG: ERŐ

Ekként lesz — a „kettő meg kettő öt" jelmondat révén — újbeszélül *öt* az, ami óbeszélül négy volt (305), illetve újbeszélül *emlékezés* az, ami óbeszélül felejtés volt (237). Végül minden katakretikus jelentésbővülés két, egymással ellentétes jelentéselemet tartalmaz, amelyek egyike az óbeszélből örökölt, a másik pedig az újbeszél újítása. Az újbeszél e kettős szemantikája a *duplagondol* kettős gondolkodását eredményezi (13), lehetővé téve a Párt által áhított „valóságszabályozást" is (237). Csak a „Két Perc Gyűlölet" alatt van lehetőség őszinte érzelmek megmutatására — igaz, ez is inkább csak a katakretikus gondolkodás olajozott működését felügyelő Gondolatrendőrség malmára hajtja a vizet.

Hasonlóan gazdag katakretikus jelentésbővítésekben Orwell *Állatfarm*ja, ahol a *győzelem* jelentése veszteség, rombolás, tönkretétel (Orwell 2012a : 99), ahol nagy odafigyeléssel szervezik az ún. *spontán tüntetéseket* (109), ahol a *kiigazítás* jelentése csökkentés (106), és ahol az állatok közötti *egyenlőség* fogalmába belefér az is, hogy „egyes állatok egyenlőbbek a többinél" (126).

A politika és a politikai irodalom terepét elhagyva végül még néhány olyan katakrézist szeretnék említeni, amelyben a jelentésbővülés egy-egy csoport társadalmi-kulturális önmeghatározását érinti. A *meleg* kifejezés például olyan katakrézisnek tekinthető, amely egy korábban tabunak számító jelenséget tesz megnevezhetővé, miközben a homoszexualitás társadalmi — vagyis nem-orvosi, nem-biológiai — aspektusát ragadja meg. Ebben az esetben nem a jelenség, hanem a fogalom tekinthető újnak, vagyis

maga a jelenség konceptualizálása és ekképp a fogalom köznyelvivé válása. Hasonlóképp katakretikus az angol *queer* szó jelentésbővülése: mint George Chauncey rámutat, a *queer* akkor vesztette el negatív konnotációját, amikor a meleg szubkultúra felvállalta — önmagára alkalmazta — az azelőtt stigmának szánt címkét (1994 : 101). Korábban hasonló katakretikus jelentésbővülésen ment át a *décadent* francia szó, amelyről akkor hántották le a negatív jelentést, amikor a dekadensek önmagukra kezdték alkalmazni.

*

Laza nyelvhasználatban a katakrézis jelentése referens nélküli metafora. Ez a hétköznapi meghatározás a fentiek fényében pontatlannak tűnhet, de rávilágít a katakrézis nem-leíró, nem-konstatív jellegére. Ez az értelmezés a katakrézisnek éppen azt az elemét emeli ki, amely arra vonatkozik, hogy az alakzat gátolni vagy visszatartani képes a nyelv kifelé mutató, utaló (referenciális) funkcióját. Ekképp valóban a retorika egyik legfőbb trópusának tekinthető, amennyiben — mint a politikai-ideologikus katakrézis fent elemzett példáiból látható —„[a] retorika radikálisan felfüggeszti a logikát, és a referenciális eltévelyedés szédítő lehetőségeit nyitja meg" (de Man 1999 : 23). Mozgástere a szavak által határolt tér, ahol a jelentések elcsúsznak, eltolódnak a szavak között. Mint de Man írja, „a szó képessé válik arra, hogy önmagából és önmaga által hozza létre a természetes megfelelővel nem is rendelkező, jelölt entitást" (de Man 2000 : 17).

A beszélő egyszerre lesz újszerű jelentésalkotó és a nyelv különös működésének elszenvedője. Egyrészt jóval nagyobb mozgásteret kap, mint más trópus használata esetében, amennyiben ő maga alkothat új jelentéseket. Másrészt mintha jól meg is tréfálná a nyelv a beszélőt, aki ekképp teljes bizonytalanságban él „a szavak és a dolgok" foucault-i kapcsolata tekintetében. A világ iránti kíváncsiságunkat pedig csak úgy élhetjük ki, ha a nyelven belül, a jelölők rendszerében maradunk. Hiszen minden, amit az ember tud a világról, nyelvi; a nyelv az emberi tudás letéteményese, terepe.

HIVATKOZÁSOK

Bollobás Enikő. 2010. *THEY AREN'T, UNTIL I CALL THEM — Performing the Subject in American Literature.* Frankfurt: Peter Lang.

Bollobás Enikő. 2012. *Egy képlet nyomában — karakterelemzések az amerikai és a magyar irodalomból.* Budapest: Balassi.

Chauncey, George. 1994. *Gay New York: Gender, Urban Culture, and the Making of the Gay Male World, 1890–1940.* New York: Basic Books.

Codrescu, Andrei. 1991. *The Hole in the Flag.* New York: Avon Books.

de Man, Paul. 1991. Szemiológia és retorika. Ford. Orsós László Jakab. In: Bacsó Béla (szerk.), *Szöveg és interpretáció.* Budapest: Cserépfalvi Kiadó. 115–127.

de Man, Paul. 1999. *Az olvasás allegóriái.* Ford. Fogarasi György. Szeged: Ictus.

de Man, Paul. 2000. A metafora ismeretelmélete. Ford. Katona Gábor. In: *Esztétikai ideológia.* Pécs: Janus–Osiris Kiadó. 7–28.

Derrida, Jacques. 1991. Az el-különböződés (*La différance*). Ford. Gyimesi Timea. In: Bacsó Béla (szerk.), *Szöveg és interpretáció.* Budapest: Cserépfalvi Kiadó. 43–62.

Derrida, Jacques. 1994. „A retorika virága": a napraforgó. Ford. Gyimesi Timea. *Határ* I/1 : 27–38.

Fontanier, Pierre. 1977 [1827]. *Les Figures du discours.* Paris: Flammarion.

Foucault, Michel. 1986. *Death and the Labyrinth — The World of Raymond Roussel.* Ford. Charles Ruas. New York: Doubleday.

Foucault, Michel. 2000. *A szavak és a dolgok.* Ford. Romhányi Török Gábor. Budapest: Osiris.

Kertész Imre. 2001. *A száműzött nyelv.* Budapest: Magvető.

Orwell, George. 2012a [1946]. *Állatfarm — Tündérmese.* Ford. Szíjgyártó László. Budapest: Európa Diákkönyvtár.

Orwell, George. 2012b [1949]. *1984.* Ford. Szíjgyártó László. Budapest: Európa Diákkönyvtár.

Saussure, Ferdinand de. 1967. *Bevezetés az általános nyelvészetbe.* Ford. B. Lőrinczy Éva. Budapest: Gondolat.

Szász Béla. 1989. *Minden kényszer nélkül—egy műper története.* Budapest: Európa.

Szathmári István (szerk.). 2008. *Alakzatlexikon. A retorikai és stilisztikai alakzatok kézikönyve.* Budapest: Tinta Kiadó.

Bollobás Enikő
bollobas.eniko@btk.elte.hu
Eötvös Loránd University
Budapest

32. oldal: üres

Szó, fogalom és jelentés

Marosán Lajos

§1. Számos közkézen forgó szemantika illetve nyelvfilozófiai tankönyv egyik kedvelt témája a különféle jelentéselméletek taglalása. Az egyik ilyen elmélet szerint, amely a logikai típusú elméletek közé tartozik, a szó jelentése nem más mint a fogalom; ugyanez az elmélet a mondat jelentését a propozícióban látja. A *fogalom=jelentés*-elméletnek van néhány nyilvánvalóan előnyös vonása. Az egyik az, hogy filozófiai és szemantikai szempontból megnyugtató, hogy a szavaknak — jelölőknek — van valamilyen jelöltje, ami nem maga a szó esetleges referense, hanem egy olyan jelölt, ami maga is valamilyen nem testi entitás, hiszen nyilvánvaló, hogy a beszéd szavakból, azaz, nyelvi kifejezésekből, tehát szellemi entitásokból áll össze, és a kommunikáció nem Swift tudósainak módján történik, akik valóságos referenseket, azaz, tárgyakat cipeltek magukkal a tudományos diskurzusok félreértésmentes lebonyolítása érdekében. Az általános elképzelés az tehát, hogy a nyelv csak jelölő, de önmaga azonban nem jelölt, azaz, nem a nyelv teremti meg saját magában saját maga jelöltjét. Ha ez így van, akkor viszont kell jelöltet találni, és a fogalom kiváló jelölt. Ugyanis nyilvánvalóan senki sem akarná azt mondani, hogy az *asztal* szó elhangzásakor — ha szabad képzavarral élnem — egy igazi hús-vér asztal kerül be a beszédünkbe, hanem inkább helyette valami, ami ugyanolyan szellemi, elvont mint maga a szó. Erre pedig a fogalom az alkalmas entitás; az, hogy például az asztal fogalma és maga a fizikai valójában megjelenő asztal között mi a kapcsolat, azaz, tehát, hogy végső soron, mi a jelölő — a szó — és a szó jelöltje — az asztal — viszonya, a fogalom és a tárgy viszonyára egyszerűsödik, amennyiben előhívhatjuk a fogalomalkotásról szóló filozófiai téziseket (ld. alább). A tudományos munkamegosztás viszont kiválóan biztosítja, hogy ne kelljen senkinek se szembe nézni a problémával: a szemantika vagy a nyelvfilozófia megállapítja, hogy a szavak fogalmakra referálnak, a filozófus elelmélkedik a fogalomalkotás részletein, de egyetlen tudomány

szférájába sem tartozik, hogy megvizsgálja e három terminus viszonyát. Egy másik előnyös vonása ennek az elképzelésnek, hogy viszonylag konfliktusmentes magyarázatot kapunk arra, hogy a különféle nyelvek miért fordíthatók egymásra — az embereknek azonosak a kognitív képességeik az egész világon, tehát alapvetően azonos metafizikai szerkezetű világban élnek, és ennek megfelelően azonos fogalmakkal ragadják meg a világot. Továbbá, a kognitív képességek — többek között — gondolatok megalkotására adnak lehetőséget; a *fogalom=jelentés*-elmélet a jelentéseknek nemcsak az egyes nyelvektől, hanem a gondolatoktól, illetőleg a gondolkodástól való függetlenségét is biztosítja. Ebben a néhány bekezdésben — az esetleges várakozások ellenére — nem egy új jelentéselméletet akarok kifejteni, sem nem a gondolkodási mechanizmusok egy új aspektusára szeretném felhívni a figyelmet, hanem ennél kevésbé ambiciózus célként azt tűztem magam elé, hogy megvizsgáljam, mennyi alapja van a *fogalom=jelentés*-elméletnek, azaz, mennyire jogosult azonosítani a szó jelentését a fogalommal. Amellett, hogy azok a szerzők, akik ragaszkodnak ehhez az álláspontho nem tartják fontosnak a szó definiálását, a fogalom teljes körű vagy akár részleges meghatározásától is eltekintenek — egy olyan meghatározástól, amely figyelembe venné a különféle szófajokat és a velük asszociálható jelentéseket. Az itt következő fejtegetés a fogalomból indul ki, és arra a megállapításra jut, hogy a fogalom tulajdonképpen nem más, mint jelentés, tehát nem a szó jelentése a fogalom, hanem a fogalom maga a jelentés, azaz, elnagyoltan fogalmazva egy szó fogalma és jelentése ugyanazt a tartalmat nevezi meg. A jelentés és a szó kifejezéseket mindvégig intuitív, vagy tudományosabban fogalmazva, preteoretikus értelemben kívánom használni. A következő kérdéseket szeretném megvizsgálni. Vajon kapcsolódik-e minden szóhoz fogalom? Első ránézésre kétségesnek látszik egy ilyen feltevés. Nehéz volna ugyanis elképzelni, hogy, például, kötőszavak, pre-, illetőleg posztpozíciók, determinatívumok, segédigék és számos egyéb grammatikai elem „mögött" fogalmak vannak. Ha valaki nagyon ragaszkodnék ehhez az elképzeléshez, bizonyosan nehéznek találná ezeknek a fogalmaknak a taglalását. Sokkal kézenfekvőbbnek látszik az ún. szabad szóosztályokhoz tartozó szavakkal fogalmat társítani. Például, egészen biztos vagyok abban, hogy a *szabadság* vagy az *egészség* szavak mögé könnyű egy-egy fogalmat elképzelni — bármik is legyenek azok —, többek között azért, mert jól taglalhatók, és mert főnevek. Ugyanakkor egyáltalán nem biztos, hogy az *asztal* vagy a *patkány* — amelyek szintén jól taglalhatónak tűnnek, és ráadásul főnevek is — olyan szavak, amelyek megérdemlik, hogy fogalmuk is legyen. Vagy mi legyen a melléknevekkel, az igékkel és a határozószavakkal? Ha úgy hozza a sors *a patkány fogalma* kifejezés még érthetőnek és értelmes kifejezésnek tűnik, de *a nagy fogalma*, vagy *a gyorsan*

fogalma, vagy *az ásít fogalma* teljesen értelmetlen, nem is beszélve *az és fogalmáról* vagy *az alatt fogalmáról*. Nyelvi kérdésről van-e tehát itt csupán szó, amely megfelelő nyelvismerettel megoldható, és egy kis ügyességgel azt mondhatjuk, hogy a *nagyság/gyorsaság/ásítás fogalma* vagy ennél bonyolultabb a helyzet? Továbbá, a nyelv része-e a fogalom, vagy csak nyelvi formában ölt testet, vannak-e típusai a fogalomnak, és egyáltalán milyen tulajdonsággal/okkal bír, hol található. Ezekre a kérdésekre nyilvánvalóan csak akkor tudunk válaszolni, ha tisztázzuk mi is a fogalom, pontosabban, ha megvizsgáljuk, mit tartanak filozófusok fogalomnak.

§2. Először szeretném áttekinteni Margolis & Laurence (2006) írása alapján, hogy mi is a fogalom, milyen szerepet szánnak neki egyes filozófusok a gondolkodásban, és melyik fogalommeghatározás látszik a legalkalmasabbnak arra, hogy egy jelentéselméletben szerepet játszhassék. Ennek a bekezdésnek az a célja, hogy általános tájékoztatást nyújtson a kérdésről.

A fogalom ontológiájáról, azaz, létének lényegéről, szóló különféle elméleteket három csoportba osztják a szerzők. Az első elméletcsoport a fogalmat mentális reprezentációként határozza meg, azaz, valamilyen közelebbről nem definiált pszichológiai objektumként. Ezt az álláspontot a reprezentációs elmefilozófiai elmélet képviselői hirdetik (Representational Theory of Mind, RTM), akik szerint a gondolkodás elmebeli reprezentációk segítségével történik. Így, például, a hitek, vágyak és egyéb propozicionális attitűdök (propositional attitude) mentális szimbólumokként vesznek részt gondolkodásunkban. Egyes vélemények szerint ezeknek a reprezentációknak szerkezetük van, azaz összetevőkből állnak és nyelvszerű struktúrát alkotnak, valamint szemantikai kompozicionalitás jellemzi őket. Ennek a felfogásnak a legismertebb válfaja a többek között J. Fodor által képviselt mentális nyelvről szóló hipotézis (Language of Thought Hypothesis, LOTH). A RTM fontos eleme a kognitív tudománynak, és sokak szerint a reprezentációkkal magyarázható a gondolkodás produktivitása. Bár hogy pontosan mi is az, amit mentális reprezentációként azonosítanak, nem derül ki az elmélet képviselőinek írásaiból, tehát maga az alapfogalom is magyarázatra szorul. Történeti perspektívából tekintve, a RTM a 17. századi brit empirista filozófusokig követhető. A mentális reprezentációk megfeleltethetők Locke és Hume *ideáinak,* amelyeket ők mentális képekként képzeltek el. A modern RTM nem képekben (mental images) gondolkodik.

A fogalomról alkotott ontológiai elképzelések egy másik csoportja „a fogalom mint képesség" cím alá foglalható. Egyik legjelentősebb képviselője Millikan (2000). A képességelméletet a mentális reprezentációval kapcsolatos szkepticizmus egyik megnyilvánulásaként foghatjuk fel, és amelyet

röviden úgy jellemezhetünk, hogy egy entitás fogalma, amely sem nem mentális kép, sem nem mentális szó, lehetővé teszi számunkra, képessé tesz minket arra, hogy egy bizonyos entitást megkülönböztessük másoktól, újra felismerjük és különféle következtetéseket alkossunk vele kapcsolatban. Ennek az elméletnek fő hibájául azt szokták felróni, hogy nem tudja megmagyarázni a gondolkodás produktivitását, valamint nincs sok mondanivalója a mentális folyamatokról.

A harmadik csoportja a fogalomontológia elméleteknek az, amelyik a fogalmat, mint „fregei értelmet" értelmezi. Mint látni fogjuk a tárgyalás folyamán, ez az elképzelés hasznosnak fog bizonyulni fejtegetéseink számára. E szerint, tehát, a fogalom absztrakt objektum, vagyis sem nem az elménkben lakozó mentális objektum, sem nem reprezentáció, de nem is mentális állapot, leginkább a platóni ideákhoz, valamint a referensekhez hasonlatos az elmétől való függetlenség szempontjából. Frege szerint a fogalom a propozíció, vagy ahogyan ő nevezte, a gondolat, alkotórésze, amely összekapcsolja a gondolkodást a nyelvvel és a referensekkel/referenciával. Frege elképzelése szerint a szavak értelme, jelentése (*Sinn*, *sense*) a fogalom. Itt Margolis & Laurence a szokásos fregei példákkal hozakodik elő: ugyanarra a személyre/objektumra többféle nyelvi kifejezéssel is utalhatunk. Például, a Mark Twain és a Samuel Longhorne Clemens nevek ugyanarra a személyre utalnak, vagy — hogy magyar példánk is legyen — az 'a nemzet napszámosa' főnévi kifejezésnek (és egyben határozott leírásnak), és a (szerénységével hivalkodó) tulajdonnévnek, Vas Gerebennek, valamint a Radákovics József összetételnek ugyanaz a referenciája. A példák tetszés szerint szaporíthatók. Ugyanakkor ezek a példák — miközben jól megvilágítják a fregei elképzelést — azért félrevezetők, mert többnyire tulajdonnevekkel operálnak, és egyáltalán nem világos, hogy a tulajdonnévvel megjelölt entitáshoz tartozik-e a fogalom, különösen akkor, amikor Frege a fogalom kifejezést csak a (logikai értelemben vett) predikátumokkal kapcsolatban használta.

A fogalmak természetét tárgyaló enciklopédiai cikkük második fejezetében Margolis & Laurence a fogalmak struktúráját tárgyalja. Az általuk klasszikusnak nevezett elmélet szerint, amely e dolgozat számára fontos elemeket tartalmaz, minden lexikális fogalomnak (lexical concept) — bármi is legyen az — van szerkezete, amely definícióval határozható meg, és amely a fogalom terjedelmébe tartozáshoz szükséges és elégséges feltételeket tartalmazza. Mivel egy-egy fogalom definíciója maga is fogalmakból épül fel, ezért a fogalom kompozicionális szerkezetű. Például, az *agglegény* fogalma — ha szabad újfent egy klasszikus példával előhozakodni — a *férfi* és a *nőtlen* fogalmak segítségével határozható meg, úgy hogy e két fogalom által jelölt tulajdonságok megléte szükséges, együttes megjelenésük,

pedig, elégséges ahhoz, hogy egy bizonyos entitás az *agglegény* fogalmába tartozhassék. A klasszikus elmélet nincs ellentétben azzal a megfigyeléssel, hogy egy fogalom definíciója változik — bővül vagy szűkül — ismereteink változását követve. A fogalomalkotás tulajdonképpen kategorizáció, amely olyan pszichológiai folyamat, amely során megvizsgáljuk, hogy a kérdéses entitás tulajdonságai megfelelnek-e a definíció egyes elemeinek, azaz a referens definíciójához hasonlóan a referens tulajdonságainak vizsgálata dönti el, megfelelnek-e a fogalom meghatározásában foglaltaknak. Minden filozófiai iskola hagyományosan megbecsült módszere fogalomelemzés, ami alapvetően a fogalom fentebb ismertetett klasszikus elméletén alapul, amely a priori vizsgálja és taglalja a fogalmakat tartalmi szempontból, ezt pedig az teszi lehetővé, hogy az egyes fogalmak összetevőkre, azaz további fogalmakra, bonthatók és ezek explikálhatók.

Az elmúlt évtizedekben elhangzott jogos bírálatok azt róják fel a klasszikus fogalomelméletnek, hogy az egy fogalom alá tartozó entitások nem szükségszerűen tartalmazzák az összes definícióban felsorolható kritériumot, ezért sokan inkább úgy gondolják, hogy vannak prototipikus és kevésbé prototipikus entitások, amelyek azonban ugyanazon fogalom alá rendelhetők. Ezeket a megfigyeléseket a klasszikus elmélet nem képes megmagyarázni. A klasszikus fogalomelmélet hiányosságait a prototípuselmélet kívánta orvosolni. A prototípuselmélet képviselői szerint a lexikai fogalomnak nem definíciós, hanem probabilisztikus szerkezete van, amennyiben elegendő, ha egy entitás a szükséges mennyiségű tulajdonságnak megfelel (az ún. tipikalitási feltételeknek), de nem a klasszikus értelemben vett összesnek. A fogalomalkotás kifejezés helyett szívesebben alkalmazzák a kategorizálás terminust. A kategorizáció sokkal inkább két fogalom hasonlóságán alapul, mintsem absztrakt definíciókon. Például, annak a magyarázata, hogy a felmérések szerint az *alma* prototipikusabb gyümölcs, mint a *szilva* arra utal, hogy az almának több közös jellemvonása van a *gyümölcs* fogalommal, mint a szilvának. Ez a példa másfelől arra is jó, hogy megtudjuk: az *alma, szilva* szavakhoz tartozik fogalom; mint a bevezetőben utaltam rá, nem világos a fogalomról szóló fejtegetésekben, hogy vajon minden szóhoz valamilyen módon tartozik egy fogalom, vagy csak a szavak egy kitüntetett csoportjához (ld. alább).

A prototípuselmélet sok mindent megmagyaráz, például, azt is, hogy miért nehéz számos kategória esetében definíciót alkotni, de főleg az azonnali kategorizációs ítéleteket helyezi figyelme középpontjába. Ha azonban alaposabb megfontolásra kerül sor, már más eredményeket mutatnak a kísérletek. Margolis & Laurence érdekes (és legalább ennyire valószínűtlen) példája arról szól, hogy a mosómedvévé átoperált kutyát kutyának és nem mosómedvének kategorizálják a megkérdezettek alaposabb mérle-

gelés után. Megoldhatatlan problémát okoznak azonban a kompozicionalitással kapcsolatos megfigyelések. Összetett fogalmak esetén olyan tulajdonság is felmerül(het), ami az összetevő fogalmakban nincs benne. Például, a *pet fish* ('díszhal') kifejezés által jelölt fogalommal vagy kategóriával kapcsolatban felmerült, hogy a referensek élénk szinűek, jóllehet sem a *pet* sem a *fish* fogalmának prototipikus szerkezetébe nem tartozik szín. A fogalommal kapcsolatos problémák lehetséges megoldása, hogy a prototipikalitás csak részét képezi a fogalmi szerkezetnek, amely így más típusú elemeket is tartalmazhat (ld. alább).

Margolis & Laurence *theory theory*-nak nevezi azt a holisztikus fogalomelméletet, amely azt tartja, hogy fogalmaink egymással viszonyban vannak hasonlóan egy tudományos elmélet terminusaihoz, valamint a (hétköznapi) fogalomalkotás vagy kategorizáció a tudományos elméletalkotáshoz hasonló folyamat. Mivel ez az elmélet holista, ezért egy fogalom tartalmát nem az összetevői, hanem az elméletben játszott szerepe, azaz a többi fogalomhoz való viszonya határozza meg.

A fogalmi atomizmusként ismert elképzelés azt a nézetet kívánja megnevezni, ami szerint a fogalmaknak nincs szemantikai szerkezete, azaz, nincs definíciójuk, mint ahogyan az eddig vázolt elméletek ilyen vagy olyan módon állították. Ez a nézet azon alapul, hogy megfigyelések szerint egyes emberek más és más leíró tartalmat, azaz, definíciót, társítanak ugyanazzal a fogalommal. Úgy tűnik tehát, hogy a nagyfokú pszichológiai változatosság összeegyeztethető a világ-elme oksági viszonnyal, azaz nagyfokú különbségek vannak a referenciameghatározásban anélkül, hogy ez konfliktusokhoz vezetne. A fogalmi atomizmus a modern filozófiában az anti-deskriptivista néven elhíresült hagyományba illeszkedik (Kripke, Putnam), ami például tagadja, hogy egy személyhez annak tulajdonságai alapján kötjük a nevét. Kripke szerint egy személy és neve között szükségszerű kapcsolat van, míg tulajdonságai (azaz, a személy különféle ismertetőjegye és azok leírása) csak esetlegesek. Hasonló álláspontot fogalmazott meg Putnam a természetes fajtákkal kapcsolatban.

Margolis & Laurence azzal a megállapítással zárja ezt az alpontot, hogy a fenti elméletek egyszerre lehetnek igazak, mivel a fogalmak különfélék és ezért nem feltétlenül vonatkozik mindre ugyanaz. Ezt az álláspontot nevezik a szerzők a fogalom szerkezetével kapcsolatos pluralizmusnak. A cikk további részében olyan témákat tárgyalnak, amik érdektelenek e dolgozat szempontjából: a fogalmakkal kapcsolatos empirizmus és nativizmus, fogalmi elemzés. *A fogalom és a természetes nyelv viszonya* című alfejezet sajnálatosan nem azt az aspektusát feszegeti a kérdésnek, ami érdekes lehetne számunkra, mivel általánosságban azt taglalja, hogyan függ

össze a nyelv a gondolkodással és nem azt, hogy az egyes fogalmak hogyan nyernek nyelvi kifejezést, vagy fordítva: van-e a szavak „mögött" fogalom.

§3. A következőkben rátérnék a klasszikus fogalom taglalására, ahogyan az egyes szerzőknél megjelenik. A szerzők kiválasztása nemcsak tűnhet impresszionisztikusnak, hanem az is — minden filozófus ejt néhány szót a fogalomról, a fogalomalkotás és fogalomelemzés fontosságáról, de csak kevesen veszik a fáradtságot, hogy részletesebben is szóljanak ezekről a kérdésekről, és ha szólnak, akkor is nehéz az álláspontok összehangolása.

Először Strawson (1974 : 14skk.) álláspontját taglalom. Mint látni fogjuk, Strawson fogalomfelfogása Margolis & Laurence ismertetése alapján leginkább az általuk klasszikusnak nevezett elmélettel hozható összefüggésbe. Strawson szerint a világról való gondolkodás általános fogalmakat követel meg, és a világról való tapasztalatunk teszi lehetővé a világról szóló ítéleteinket: a tapasztalat testesíti meg a fogalmakat, és a különféle szituációk pedig a fogalmak eseteit alkotják. Strawson a fogalmaknak több fajtáját különbözteti meg. Az általános fogalmakat számos egyedi eset illetőleg körülmény testesíti meg: (1) egyedi entitások (partikulárék) viszonylag állandó tulajdonságai és sajátosságai, (2) különféle fajták (species), amelyek alá partikulárék, azaz egyedi példányok tartoznak, (3) események, amelyek partikulárékkal megtörténnek és (4) partikulárék különféle állapotai. Ebből a felsorolásból látszik, hogy a fogalom a nyelvi megfogalmazástól független életet él, hiszen olyan tapasztalatok számára is van fogalom, amik nem fejezhetők ki főnévvel (ld. alább). Ugyanakkor, Strawson azt állítja, hogy a fogalmak alapvetően nyelvi kreációk, amelyek — szemben a téridőbeli entitásokkal — a létezésüket a szavaknak köszönhetik, és tulajdonképpen a szavak jelentései—„senses of expressions" (1974 : 39). Az a kifejezés—„a fogalmak a szavak jelentései"—vajon azt jelenti, hogy Strawson is híve a szóban forgó jelentéselméletnek, azaz annak, hogy a fogalmak és a jelentések tulajdonképpen ugyanazok az entitások, tehát, nincs értelme megkülönböztetni a kettőt, és azonos a szavakhoz való viszonyuk. Minden egyes fogalom — akár általános (general), akár egyedi (particular) — tulajdonképpen egy csoportosítási és megkülönböztetési elv, amelyet az alá tartozó entitások testesítenek meg. Strawson álláspontja ebben a tekintetben is támaszkodik a klasszikus hagyományra. Hegel (1979: II/Harmadik könyv) álláspontja szerint ugyanis a fogalom megadásához a nem (genus) fogalmon kívül, amely már maga sem tulajdonképpen tisztán elvont általánosság, kifejezetten a specifikus meghatározottságra is szükség van, azaz a megkülönböztetés lényeges mozzanata a fogalomnak. Eszerint, tehát, az

egymással egy fogalomtartományba tartozó fogalmak kölcsönösen kizárják egymást. Így a *nagymacska* tartományába tartozó állatok, például, vagy a *tigris,* vagy az *oroszlán* stb. fogalma alá tartoznak. Egy fogalomtartomány egy olyan logikai tér—folytatja Strawson —, amelyet a tartományba tartozó egyes fogalmak alkotnak; ez a meghatározás egyaránt igaz az általános és az egyedi fogalmakra. A fogalmak fogalomtartományokban való felfogása, valamint a fogalmak viszonyának e felfogása emlékeztet a szemantikából ismert, a 30-as években Trier által javasolt mezőelméletre, ahol egy jelentésterületet az odatartozó szavak jelentései teljesen kimerítenek. Ezt azért tartom fontosnak megemlíteni, mert számos szerzőnél feltűnik a fogalom taglalása során a jelentéssel való párhuzamosság, és ezért felmerül a kérdés szükség van-e a kettő megkülönböztetésére. Bár Hegel Strawsonnál jóval absztraktabban fogalmaz (és helyenként metaforikusan is, amikor, például, azt mondja, hogy a fogalom olyan csomó, amit az ember köt a természet hálójába), mégsem érezzük úgy, hogy álláspontjaik összeegyeztethetetlenek, ugyanis Hegel azt állítja, hogy a fogalom a lét és a lényeg szubsztrátuma és igazsága, továbbá, hogy a lényeg a létből, a fogalom pedig a lényegből, tehát a létből is, lett, más szavakkal, tehát, a lét és a lényeg a fogalom levésének a mozzanatai. Hegel szerint is a szemlélet vagy a lét feltétele a fogalomnak.

§4. Gellner (2005 : 140) fogalomfelfogását a brit nyelvfilozófiai hagyományból ismert *jelentés=használat*-elmélet jellemzi. Egyes brit filozófusok szerint (például Dummett, Austin, Grice) egy szó jelentése tulajdonképpen nem más, mint a szó használati szabályainak ismerete. Azaz, tulajdonképpen elég ha a szó használatának szabályaival vagyunk tisztában, máris meg tudjuk mondani mi a jelentés.

> We know how to *use* the concept, but not how to account for it: but if concepts are the *use* we make of words, do we not become also capable of accounting for them, as soon as we realise that indeed a concept is what it *does*?

Azaz, ha nem is tudjuk mi a fogalom, még tudhatjuk megfelelően használni, és tulajdonképpen a használatánál többet nem is kell tudni a fogalomról. (Ezek szerint, tehát, e sorok megírása felesleges fáradozás.) Fontos mozzanata Gellner álláspontjának, hogy a szó és a fogalom szoros kapcsolatot alkotnak; míg tehát másoknál a szó használata a jelentés, addig Gellnernél a fogalom használata a szó, azaz, szavak mondatkontextusba helyezése (legalábbis más értelmezését nem látom a kijelentésnek),

akkor viszont mi a jelentés? Gellnernél is felmerül az itt tárgyalt probléma, nevezetesen az, hogy mi is a kapcsolat a szavak és a fogalmak között. Az a véleménye, hogy a szókincsnek csak egy része „mögött" van fogalom (nyilván, ezekre igaz a fenti kijelentés), a fogalom nélküli szavaknak csak jelentésük van: ismét a fogalom és a jelentés valamilyen azonossága figyelhető meg. Szerinte két egymással össze nem békíthető álláspontot lehet megfogalmazni. Az egyik szerint vannak olyan fogalmak, amelyek azonosak a szavak jelentésével, míg a másik úgy fogalmaz, hogy a fogalmak tudatos tevékenység eredményei, és ezért csak kevés szóhoz társíthatunk fogalmat. Nyilvánvaló, hogy Gellner álláspontja abból az intuícióból fakad, hogy fogalmakról általában tudományos diskurzusban szoktunk beszélni, illetve a fogalomalkotás filozófiai problémája általában az elvont problémamegoldó gondolkodásban felmerülő eszközöket (szavakat?, fogalmakat? vagy szavakat abban a reményben, hogy egyben a fogalmakat is) vizsgálja. Másképpen fogalmazva, vélhetően Gellner is ellenérzését fejezi ki az iránt, hogy a hétköznapi, nyilvánvaló jelentésű szavakat fogalmakkal társítsuk, ami a tudományos diskurzusban használt szavak sajátossága, és ami gondos elemzése eredménye. Tehát, nem tűnik furcsának taglalni a *szabadság*, a *kizsákmányolás* vagy a *részecskegyorsulás* fogalmát, míg mondjuk a *mosdó* vagy az *alsónadrág* fogalmáról beszélni nevetséges, vagy legalábbis módfelett furcsa. Gellner véleménye az, hogy a szavak és fogalmak kapcsolata nem automatikus, azaz, egy szóhoz nem szükségképpen rendelődik fogalom. Megfordítva azonban más a helyzet: kitalálhatunk fogalmakat és alkothatunk számukra szavakat. Azt látjuk tehát, hogy Gellner a fogalom kapcsán három tényezőt említ: fogalmakat, szavakat és jelentéseket. Bármennyire is rokonszenvesnek találom azt az állítását, hogy a szókincsnek csak egy részéhez szeretne fogalmakat kapcsolni, sajnos csak nagy vonalakban vázolja az álláspontját, részletes elemzést nem ad arról, hogy mindez, hogyan függ össze a jelentéssel. Tehát, a következőképpen lehet Gellner álláspontját összefoglalni: minden szónak van jelentése, de csak kevéshez tudunk fogalmat kapcsolni. Vojsvillo (1978, ld. ¶6) szövege szerint Scserba, akit elsősorban fonológiai munkássága tette ismertté, hasonló álláspontot tesz magáévá a szó, fogalom és használat tekintetében. Scserba véleménye szerint a szó által kifejezett, azaz a szó értelmét alkotó, fogalom az adott szó használatának lexikai szabálya. Ebben az állításban — akárhogyan is hangzott eredetiben — nyelvészeti szempontból fogalmazódik meg a „szó jelentése=fogalom" álláspont. Mint már említettem, Gellner szóba hozta, de nem dolgozta ki, hogy a fogalomnak nemcsak a szóhoz, hanem a jelentéshez is lehet viszonya. Ajdukiewicz (1958 : 18) álláspontja is tekintetbe veszi a szót, a jelentést és a fogalmat: a név (= a logikai hagyományban a nagy szófajok szavaira így utalnak) jelentését fogalomnak nevezzük, a jelentés

pedig a szó adott nyelvben kialakult értelmezése; a név értelmi tartalma. Ez a rövid nyilatkozat ugyan végső soron azt állítja, hogy a szó jelentése a fogalom, ugyanakkor igyekszik taglalni a jelentés jelentését is. Vojsvillo idézi (1978 : 270sk.) Kotarbińskit is, aki szerint a névnek megfelelő fogalom tartalma ugyanaz mint a név jelentése. 'X rendelkezik z fogalmával' azt jelenti, hogy X érti a z terminust. Továbbá, egy szót az ért meg, aki tudatában van annak, milyen ismérveket tulajdonítanak az adott szóval jelölt objektumnak. A szokásos szóhasználat szerint egy *terminus* tulajdonképpen szó, ami nyelvileg kifejezi a fogalmat, tehát végülis egy bizonyos objektum ismérvei közvetlenül a szóhoz kapcsolódnak — ha helyesen értem (Vojsvillón keresztül) Kotarbińskit. Wartofsky (1977 : 17sk.) is szentel néhány szót a fogalomnak tudományfilozófiai munkájában. Szerinte, a nyelv a fogalmi megjelenítés eszköze, és például, a *szék* fogalma az amit a széken, mint szón értünk; a jelentés, pedig, nem más, mint amit a kifejezésen értünk. Ebben a rövid kijelentésben is felbukkannak a fogalommal kapcsolatos fő kifejezések, tehát, a szó és a jelentés. E bekezdés rövid megnyilatkozásaiból is látszik, hogy mennyire zavaros a szó, fogalom és jelentés viszonya, továbbá, a nyelvi megértés illetőleg a használat problémája, ami véleményem szerint egy más típusú elemzés, szintén belekeveredik ebbe a kérdéskörbe.

§5. Hartmann (1972 : 549sk.) különböző írásaiban változó részletességgel beszél a fogalomról. Nyilvánvaló, hogy számára is a fogalom nem más, mint a Margolis & Laurence által említett klasszikus fogalom, azaz, a gondolkodás eszköze, egy gondolkodásforma, amely struktúrával rendelkezik, tehát, taglalható. Hartmann szerint minden gondolkodásnak az a törekvése, hogy nyelvileg rögzített fogalmakat teremtsen azzal a céllal, hogy az adott sokféleség áradatán úrrá legyen általuk és mindig túllépjen rajta; de ha valami újszerűt fog fel a gondolkodás, a beszédet néhány lépéssel alighanem mindig megelőzi (Hartmann 1972 : 311sk.). Tehát, fogalmaink rendezik számunkra a világ sokféleségét — ebben a tekintetben álláspontja alapjában véve megegyezik, például, Kantéval és Hegelével, és más a klasszikus fogalomelméletnek elkötelezett szerzőével — oly módon, hogy előbb van a gondolat, amely jelen esetben a fogalomban ölt testet és aztán a szó. Hartmann a többi szerzőtől eltérően, azonban, megkülönböztet élő és holt fogalmakat; e két fogalomfajta taglalása rávilágít Hartmann fogalomfelfogására. Egy holt fogalom tulajdonképpen nem más, mint egy olyan nyelvi kifejezés, amelyhez nominális definíció tartozik. A fogalomholizmusra emlékeztető módon, Hartmann-nak az a véleménye, hogy a holt fogalmak újraélesztése csak egy tudományos teória, egy átfogó szemlélet keretén belül lehetséges, azaz vissza kell térni történeti forrásához, oda ahol a fogalom keletkezett. Hartmann jó filozófushoz méltó módon

példát nem ad, de valószinűleg olyan terminusokra gondolhatott, mint a *flogiszton*, *aithér* vagy az *életerő*. (Egyébként van jelentésük a holt-fogalom szavaknak?) Fontos eleme a kijelentésének, hogy a fogalomhoz definíció tartozik. Az élő fogalom, viszont, új jegyekkel bővíthető, ami összefügg a látásmód változásával — ezek a megjegyzések elsősorban a „fogalom, mint tudományos terminus" perspektívából értékelhetők. Ezek szerint, tehát, Hartmann másokhoz hasonlóan úgy látja, hogy a(z élő) fogalomnak definíciós és kompozicionális szerkezete van.

§6. Vojsvillo (1978) egy egész könyvet szentel a fogalommal kapcsolatos problémák vizsgálatának, amelynek azonban csak néhány megállapítása hasznos számunkra, valamint — amint már látható volt — esetenként forrásként is használható. Más szerzőkkel (pl. Hartmann) együtt ő is úgy véli, hogy a fogalom a gondolkodás fő formája, amely egyébként nem más, mint a fogalmakkal való operálás folyamata; a fogalom a tárgyak lényeges ismertetőjegyeit tükröző, meghatározott nyelvi formát öltő gondolat — olyan gondolat, amely valamely osztály tárgyait vagy jelenségeit többé-kevésbé lényeges (és ezért az adott tárgyakra nézve közös és összességükben rájuk nézve specifikus, más tárgyak és jelenségek közül őket kiemelő) ismertetőjegyeik szerint általánosítja és emeli ki (1978 : 185). Mint látható, Vojsvillo is a klasszikus fogalomelmélet elkötelezettje, és nála is ugyanazok az elemek bukkanak fel, mint más szerzőknél: a fogalom az alá tartozó entitás lényeges ismertetőjegyeinek halmaza, tehát definíciós és kompozicionális szerkezete van. Valamely *dolog fogalma* kifejezés kétféleképpen érthető: (1) az a fogalom, amely egy bizonyos dologhoz kapcsolódik, vagy amely a szó értelmeként hozzátartozik a szóhoz; (2) annak tudása, hogy mik azok a tárgyak, amelyeket egy bizonyos szó jelöl (1978 : 165). Ebből a két pontból is látható, hogy mennyire magától adódik a szó és a vele kapcsolatba hozható fogalom azonosítása. A fogalom és a nyelv viszonyával kapcsolatban Vojsvillo megjegyzi, hogy egy fogalom különböző nyelvekben, de még egy nyelven belül is különböző kifejezési formákat ölthet, tehát a fogalom valami olyan általánosság, ami meghatározza a különböző nyelvek jelentését (1978 : 164). A különböző nyelvekben jelentkező szavak egymás fordításai, más fonetikai formájuk van, de alapjában véve ugyanazok a fogalmak fejeződnek ki bennük. Ezt a nyilatkozatot véleményem szerint értelmezhetjük úgy, hogy Vojsvillo álláspontja szerint is a szavak jelentése a fogalom, és felmerül — miként Platónnál, Hegelnél, valamint Fregénél is —, hogy a fogalom tulajdonképpen absztrakt entitás, azaz, egyedi elméktől független létező, hiszen másként hogyan lehetnének a fogalmak, ha a szavak nyilvánvalóan nem is, közösek két nyelv között. Vojsvillo sem túl nagylelkű az illusztrációkat illetően, ezért csak

feltételezhetjük, hogy a következő két eset egyikére gondolt. A filozófiai irodalomból közismert *szíves/vesés* szópár állhat példaként arra az esetre, amikor egy nyelvben ugyanaz a fogalom különböző nyelvi formát ölt; a különböző nyelvek esete, úgy vélem, egyértelmű. Mint nyelvfilozófiai és logikai szövegekből ismeretes, azok az állatok, amelyeknek szívük van, vesével is rendelkeznek, tehát, a két kifejezésnek — *szíves, vesés* — ugyanazok az élőlények lehetnek a referensei, még akkor is ha ezt a két szót különböző jelentésűnek is tartjuk. Bár ezt a szópárt és a hasonló példákat (egyenlőoldalú háromszög/egyenlő szögű háromszög; szükségszerűség/adott okból eredő következmény; kérődző/hasított patájú; gerinces/vörös vérű stb.) inkább az eltérő jelentésű, de azonos referenciájú szavak illusztrálására szokás felhozni, a fenti (2) pontban említettek miatt teljesen mégsem zárhatjuk ki, hogy jól illusztrálnák Vojsvillo álláspontját. A releváns fogalom ebben az esetben, pedig, a *szíves/vesés* állatok megkülönböztető sajátosságaiból tevődik/-ne össze. Vagy talán szinonim kifejezésekre gondol Vojsvillo, mint például a *kutya* és *eb*? Ezek szerint az volna a helyzet, hogy van egy fogalmunk, amelyet, például, a magyarban a *kutya* és az *eb* szavakkal fejezünk ki. Bárhogy is gondolja szerzőnk, számomra két fontos mozzanat látszik említésre méltónak. Az egyik az, hogy ezek szerint nincs egy az egy megfelelés a szókincs és a fogalomkincs között (hiszen az egy „kutyafogalom"-hoz két szó tartozik: *kutya, eb*), és ami ezzel összefügg, hogy a fogalomkészlet független az egyedi nyelvektől; a másik mozzanat pedig az, hogy Vojsvillo összefüggést lát a fogalmak és jelentések között. A nyelvektől független, azokon kívül álló fogalomkészlet összefüggést mutat azzal az elképzeléssel, miszerint a gondolkodás és a nyelv függetlenek egymástól. A szó/fogalom viszonyának taglalásakor Vojsvillo is felteszi a minket érdeklő kérdést, hogy vajon minden szó fogalom-e? Szerinte a jelentéssel bíró szavak esetében a válasz: igen, és minden olyan esetben is, amikor tudatosul, hogy az adott szó által képviselt tárgyakat milyen ismertetőjegyek alapján választjuk ki, a szó fogalmat fejez ki (1978 : 193). Ez az álláspont implicite azt is állítja, hogy vannak jelentéssel nem bíró szavak is, és jó lenne ezek közül néhányat megismerni. Ha megértően kívánjuk értelmezni az álláspontját, akkor nyilván szerzőnk az ún. nagy lexikai osztályokra, úgymint főnév, ige, melléknév gondolhatott, mint jelentéssel bíró kategóriákra, de akárhogy is van, Vojsvillo mindenképpen ellentmond annak a maga által is hangoztatott állításának, hogy egy fogalmat több szó is kifejezhet, egyrészt ugyanannak a nyelvnek a perspektívájából, másrészt meg a fogalom egyfajta nyelveken átívelő entitás. Ekkor az „igen" válasz csak korlátozottan igaz, mivel minden szóhoz tartozik ugyan valamilyen fogalom, de nem feltétlenül tartozik kizárólagosan egy szóhoz. Vojsvillo azt a kérdést is felteszi , hogy van-e fogalom az azt kifejező szó nélkül?

Szerinte nincs, de a fogalom kialakulásának kezdetén elképzelhető, hogy megvan a fogalom, de még nincs rá megfelelő szó; Hartmann hasonló álláspontot foglal el. Schaff (1967, ld. ¶7) viszont ragaszkodik ahhoz, hogy a gondolati folyamat mindig verbális: nem az a helyzet, hogy a gondolathoz később hozzákapcsolódik a nyelvi kifejezés annak értelmével együtt, tehát, a mondat nem kifejezése a gondolatnak, mivel nem lehet olyan helyzet, hogy előbb szavak nélkül létrejönne a gondolat és csak utána találjuk meg az azt kifejező szavakat (Schaff 1967 : 206). Ebben a kérdésben vélhetően mindenkinek igaza van: egy gondolat kifejezése verbális, de a megfogalmazása során keletkező esetleges próbálkozások azt az érzést kelthetik, hogy a gondolat független a nyelvtől, és azt valamilyen módon megelőzi, hiszen van olyan érzésünk, hogy kijelentéseink eltalálják illetőleg nem találják el gondolatainkat.

§7. Schaff (1967 : 198–211) részletesen tárgyalja azt a kérdést, vajon azonosíthatjuk-e a szó jelentését a fogalommal; végső soron igenlő választ ad a kérdésre, azonban először összefoglalja a sajátjával ellenkező nézeteket, amelyek úgy vélik, hogy a szójelentés nyelvtudományi, míg a fogalom a gondolkodási folyamatokhoz tartozó (logikai), tehát két össze nem mérhető kategória. Egyes megfontolandó vélemények szerint a kettő egyenlősítése (azaz, fogalom=szó) megfosztja a szót azoktól a specifikus sajátságoktól, amik a nyelv elemévé teszik (e specifikus sajátosságok ismertetésére azonban, sajnálatos módon, nem kerül sor), ami természetesen nem jelenti azt, hogy nincs kölcsönhatás a jelentés és fogalom között, de mindkettő a maga kategóriájának törvényszerűségeinek van alávetve. Schaff szerint a fogalom és szó különbségét hangsúlyozó nézeteknek alapvetően két változata van. Az egyik változat megkülönböztet tudományos és közfogalmakat; a tudományos fogalom gazdagabb a szavak hétköznapi jelentésénél. Továbbá, míg a (köz)szavak jelentése nem változik, a tudományos fogalmaké igen (vö. Hartmann hasonló álláspontjával). Itt vélhetően az ugyanazon fonológiai szóval jelölt tudományos fogalomról van szó, amely szónak van hétköznapi használata/jelentése is; vélhetően állatnevek, különféle vegyszerek stb.; sőt, a jelentés és a fogalom ismeretelméleti tartalma is eltérő: Schaff úgy véli, hogy a fogalom átfogóbb tartalmú. Nyilvánvaló, hogy ez a nézet nem számol a szemantika jelentésváltozásról szóló számos megfigyelésével, ugyanakkor fontos hangsúlyozni, hogy nem azt mondja, hogy a jelentés és a fogalom két különböző, inkompatibilis dimenziót képvisel, hanem csupán tartalmi kifogása van a kettő azonosítása ellen. Ugyanakkor nem volna összeférhetetlen ezzel a szemlélettel, ha végső soron tagadná a fogalom létét, és azt állítaná, hogy amit fogalomként szoktunk megnevezni, az is jelentés, csak egy tagoltabb, gazdagabb tudatos válfaja az

ugyanazon szóval kifejezett köznapi jelentésnek. A fogalmat a jelentéssel szembeállító szemlélet másik változata Schaff szerint éppen ellenkező véleményen van, mint az előbb ismertetett: a jelentés tágabb mint a fogalom, mivel emocionális, esztétikai stb. elemeket is tartalmaz. Gondoljunk csak, például, Leech (1974 : 10–28) felsorolására, mely a jelentés hat különféle, a fogalmi tartalomtól eltérő aspektusát, fajtáját (vagy rétegét) különbözteti meg. Ezek szerint a következő jelentésaspektusokkal kell számolnunk: fogalmi, konnotatív, stilisztikai, affektív, reflektiv, kollokatív és végül tematikus jelentés. Mint látni fogjuk nem mindegyik jelenség releváns e tárgyalás számára, mivel e jelentésfajták némelyike a szónál nagyobb nyelvtani egységekre vonatkozik. Míg a fogalmi (vagy denotatív, kognitív) jelentés a referens olyan tulajdonságait adja meg, amelyek megkülönböztetik más entitásoktól (vö. a klasszikus fogalom fenti tárgyalását), addig a konnotatív jelentés olyan tulajdonságokat asszociál, amelyek nem szükségesek a referens egyértelmű azonosításához. Leech a *nő* szóval illusztrálja a jelenséget. A *nő* szó fogalmi jelentése legalább három olyan megkülönböztető jegyet tartalmaz, amelyek a szóval megjelölt entitást biztosan megkülönböztetik más entitásoktól: [+EMBER, −FÉRFI, +FELNŐTT]. Mint láttuk, a klasszikus fogalomról való elképzelések része a kompozicionalitás hangsúlyozása, azaz, az, hogy egy fogalom több összetevőre, jelentéselemre elemezhető. Az, hogy Leech (és sok más kutató) véleménye szerint a szó jelentése összetevőkre, további jelentéselemekre bontható arra utal, hogy fogalom és jelentés nem összeegyeztethetetlen egymással. A kognitív jelentéssel szemben a konnotatív jelentés olyan kontrasztív erővel nem rendelkező, szociálisan motivált attribútumokat ad a kognitív jelentéshez, mint például, *beszédes, konyhában tevékenykedő*, hajlamos a sírásra stb. Nyilvánvaló, hogy ez utóbbi sajátságok nem csak nőket jellemezhetnek, és ezért nem is alkalmasak azok egyértelmű azonosítására. Ugyanakkor a konnotatív jelentés, szemben a fogalmi jelentéssel, gyorsabban változik, éppen ingatag tartalma miatt. A stilisztikai jelentés a nyelv társadalmi aspektusait foglalja magában; olyan tényezők alkotják e jelentésaspektust, mint a nyelvhasználatra jellemző egyediség, dialektális jellegzetességek, a kommunikáció típusa stb.; itt már nemcsak szószintű elemek jönnek számításba. A beszélőnek a témához és a hallgatóhoz való viszonyában kifejezhető árnyalatokat nevezi meg az affektív jelentés, amelybe a szóválasztáson kívül a hangsúly és a mondatszerkesztés fontos szerepet kap. A reflektált jelentésen Leech azt a jelenséget érti, amikor egy többjelentésű szó jelentésárnyalatai egymásba játszanak. Például, a (népi demokratikus) honvédségnél használt *törzsfő*nök kifejezés elkerülhetelenül mulatságos hatást vált ki az indián kontextusból jobban ismert szó okozta áthallás miatt. Bevett szókapcsolatok befolyásolhatják a résztvevő szavak jelentését: ez a kollo-

katív jelentés. Tehát, ha mindezeket a tényezőket együttesen tekintjük, a nyelvi jelentés valóban gazdagabb tartalommal bír, mint a fogalom. Schaff explicit módon azt az álláspontot képviseli, hogy a szó jelentése a fogalom. Különféle irányból érvel az állítása mellett, de egy fontos szempontot mellőz: nem taglalja, hogy a különféle szófajok perspektívájából hogyan védhető az álláspontja. A taglalás során kiderül, hogy többnyire csak főnevek jelentése azonosítható a fogalommal (ld. Millikan 2000). Schaff egyik fő érve és egyik visszatérő kifejezése — amit lényegileg lehetetlen ellenőrizni —, hogy a fogalom és a jelentés átélése ugyanaz; ezzel tulajdonképpen egyet is lehet érteni, ha más értelmezés van a kifejezés mögött. (Schaff sűrűn él az alábbi fordulatokkal: „átélem az ítéletet, átélem a szavak jelentésének megértését".) Ennél egy megfoghatóbb (bár további kifejtésre szoruló) megállapítása úgy hangzik, hogy fogalmon a valóságnak ugyanazt az általánosító visszatükrözését értjük, amit az emberi kommunikáció aspektusában a jelentésnek szoktunk nevezni. Ugyanakkor hangsúlyozza a jelentés és fogalom közötti különbség fontosságát, ami inkább a kutatás perspektívájából, semmint lényegi jellegzetességeikből fakad. Ezek szerint, tehát, a fogalom és jelentés tartalmi különbségei csak akkor jelentkeznek, amikor különböző megismerési folyamatokról beszélünk: a tudományos fogalom különbözik a(z ugyanazon fonológiai) szó köznapi jelentésétől, de nem különbözik a tudományos szakkifejezés jelentésétől, azaz, szembeállítja a tudományos absztrakció termékét a szavak köznapi jelentésével. Továbbá, ha a nyelvi-gondolati terméket a gondolkodási folyamat szempontjából ragadjuk meg fogalomról beszélünk, ha pedig a nyelviéből akkor jelentésről, azaz ugyanazt a folyamatot más-más oldalról ragadjuk meg. Tehát, van is különbség a fogalom és a jelentés között, meg nincs is!

§8. Mint látható volt a fenti bekezdésekben, Strawson, Vojsvillo, Hartmann és a többiek empirista álláspontot képviselnek a fogalmak tekintetében, mivel álláspontjuk szerint benyomásokból jönnek létre a fogalmak. J. S. Millnek is, például, az a véleménye, hogy a fogalmak az agyban nem önmaguktól fejlődnek, hanem kívülről kerülnek bele; mindig összehasonlítási és absztrahálási folyamatok révén keletkeznek, és a legfontosabb esetekben gyakran úgy, hogy elvonatkoztatnak maguktól a jelenségektől, amelyeket össze kell kapcsolnunk. Carnap (1928) véleménye az, hogy a fő elemek, amelyekből a fogalmakat és általában a gondolkodásban a világot megkonstruáljuk bizonyos érzetek közötti viszonyok (határosság, sorrend, hasonlóság stb.). Az effajta vélekedés nyilvánvalóan szembenáll a Geach (1957 : 40) által hangoztatott elképzeléssel, miszerint a fogalmak nem a természet alkotásai, tehát az emberi elme nem felismeri őket, hanem

megalkotja, azaz, az emberi elme maga határozza meg azt a tulajdonságegyüttest, amit egy fogalomnak akar tekinteni.

> Having a concept never means being able to recognize some feature we have found in direct experience; the mind *makes* concepts, and this concept-formation and subsequent use of the concepts formed never is a mere recognition or finding...

Lehet, hogy az empirista és a geachi álláspont között nincsen olyan áthatolhatatlan szakadék, mint ahogyan az első pillanatban látszik. Erre a kérdésre nem kívánok ennél részletesebben kitérni, különösen azért nem, mivel — mint ahogyan az összefoglalásból reményeim szerint kiderül — szeretném a fogalmat megfosztani attól a már-már mítikus jelentőségtől, amit filozófusok tulajdonítanak neki, és ezért aztán az a probléma, amit Geach feszeget tulajdonképpen nem is a fogalomról szól.

§9. Ebben a bekezdésben elkezdem tárgyalni a szó, fogalom és jelentés közötti lehetséges összefüggéseket. Az első megjegyzések a fogalom szófaji megjelenítéséről szólnak, ezt követőn különféle összetett kifejezéseket vizsgálok, amelyben a *fogalom* illetőleg a *jelentés* kifejezések fordulnak elő. Cook-Wilson (1926: I/107) azt írja, hogy „... only nouns are the adequate expressions of concepts; all concepts are qualitatively of the same kind, ie. they are definable in terms of extension and intension." Jóllehet Cook-Wilson nem a szó jelentésével kapcsolatos problémákról ír, mégis tekinthetjük úgy, hogy az az álláspontja, hogy a szó jelentését nem lehet teljes mértékben azonosnak tekinteni a fogalommal, mivel csak főneveket hoza összefüggésbe a fogalmakkal. Mint látni fogjuk, ez más szerzőknél is előfordul különféle formában. Egyébként, pedig, úgy tűnik, hogy a fogalmat — és nem a jelentést — ruházza fel a közismert fregei tulajdonságokkal, azaz, extenzióval és intenzióval: jelölettel és értelemmel. Ez azt az álláspontot erősíti — amit ebben az írásban végeredményként szeretnék prezentálni —, hogy a fogalom és jelentés kifejezések alapjában véve ugyanarra a jelenségre utalnak.

Sandmann (1979) Bergsonnak tulajdonítja a következő néhány mondatot.[1] Ez a vélemény igen hasonló Cook-Wilsonéhoz, amikor (az ismeretlen szerző) úgy nyilatkozik, hogy

[1] Sandmann állítása szerint ezeket a mondatokat Henri Bergson *Teremtő fejlődés* (L'Évolution créatrice) c. művének 166. oldalán találta. Sem az eredeti francia, sem az angol, sem a magyar fordításban sem sikerült ezt a hivatkozást megtalálni, ezért forrásmegjelölés nélkül idézem.

> our concepts are of a spatial nature in their stability and their mutual limitations, and nouns are in fact spacewords which can be symbolised by circles binding together a certain number of semantic elements. We can point at nouns either directly or metaphorically in the same way as we can point at objects in space, which explains why in many languages the noun is accompanied or grammatically characterised by articles which were originally demonstrative pronouns.

Az idézet szerzője itt a főnevekkel kapcsolatos intuícióinkat fogalmazza meg, amikor a térbeliségről és a lehatároltságról beszél. Fontos eleme a kijelentésének, hogy a főnév tovább bontható szemantikai elemekre („. . . circles binding together a certain number of semantic elements. . . ”), tehát definiálható a tartalma. A strukturalista szellemű szemantika megkülönböztető jegyes jelentéselemzéséhez hasonlít ez a nézet. Úgy tűnik az idézetből, hogy a fogalom tulajdonképpen taglalt jelentés, azaz sokkal inkább ugyanarról a dologról van szó mindkét esetben, azaz a fogalom és a szójelentés esetében. Vajon véletlen-e, hogy különböző anyanyelvő szerzők egyaránt a főnévvel kötik össze a fogalmat? A kérdésre egy válasz van, mivel egy hipotézis van a háttérben, de két ellenkező irányból adhatjuk. Ha episztemológiai szempontból kezdjük a vizsgálódást, vélekedhetünk úgy, mint például Hegel (1979), vagy Trendelenburg,[2] aki azt állítja, hogy „a fogalom a szubsztancia univerzális gondolati megjelenítése”, azaz a fogalom alapvetően a szubsztanciához kapcsolódik, tehát csak szubsztanciáknak van fogalmuk, továbbá, a fogalmak mint nyelvi kifejezések, ha értelmi tartalmuk szerint vesszük őket, tárgyi vagy szubsztanciális jellegűek. Ha ehhez társítjuk a hagyományos logikai megfontolásokon nyugvó nyelvtannak azt a(z implicit) tanítását, hogy a valóság metafizikai és a nyelv szerkezete között alapvető hasonlóság van, akkor azt fogjuk látni, hogy a szubsztancia kategória/fogalom a főnév szófajban fejeződik ki, míg a tulajdonság a melléknévben, a cselekvés az igében stb., és ebben az esetben Bergson(?) és Cook-Wilson álláspontját teljesen koherensnek fogjuk találni. Ha ugyanezt a kérdést nyelvi oldalról közelítjük meg az említett nyelvtani hipotézissel felvértezve, azt fogjuk látni, hogy a szófajok közül a főnevek fejezik ki a fogalmakat, tehát, *ember, szabadság, barnaság, gyorsaság, futás* stb., mivel ezek utalnak szubsztanciákra.

§10. Ebben a bekezdésben nyelvtani szerkezeteket vizsgálok meg, amelyekben a *fogalom* illetve a *jelentés* kifejezések szerepelnek. Először tekint-

[2] Hivatkozási adatok elvesztek.

sük „*a . . . fogalma*" kifejezést. Nézzük meg, milyen kapcsolatok adnak értelmes szószerkezetet!

> *a* kutya/szabadság/semmi/futás/elemzés/fut/elemez/nagy/öreg/áldatlan/főleg/pedig/hogy/amely *fogalma*

Ezen a listán jól látható, hogy igazán csak főnevekkel hangzik jólformáltnak és értelmesnek az '*a . . . fogalma*' kifejezés, a lista közepén és végén álló szavakkal (igék, határozószók, kötőszó) pedig jószerivel értelmetlen a szókapcsolat. Nyelvtani szempontból a helyzet azzal magyarázható, hogy a birtokviszonyt kifejező szókapcsolat csak főnevek között lehet jólformált. A birtokviszony kifejezést nyelvtani forma megjelölésére használom, hiszen nyilvánvaló, hogy a szószerkezet első tagjával megjelölt entitás nem birtokolja a második tagot; tartalmilag a grammatikai jelölés azonosító értelmű, azaz, például, az első esetben a *kutya* valamilyen módon ugyanaz mint a *fogalom*: a szószerkezet leszűkíti a *kutya* szó lehetséges jelentéseit a *fogalom* szó értelmére. Mondhatjuk azt is, hogy tulajdonképpen a *kutya* szó jelentése magában foglalja a *fogalom* szó jelentését is, és ezt bontja ki a szószerkezet. Ugyanezt a megfigyelést tehetjük az angolban és a németben is.

> *the concept of* dog/freedom/nothing/running/analysis/is running/is analysing/big/old . . .
> *der Begriff des* Hundes/. . . *der Begriff des* Meistens . . .

Heideggeri formátummal és szenvedéllyel, persze, alkothatunk olyan—legalábbis nyelvtanilag—tűrhető kifejezéseket, mint a *hogyság, pedigség, futokság* stb., amelyek megfelelő (filozófiai) szövegösszefüggésben értelmesnek és elfogadhatónak hatnak. (Például, Heidegger után szabadon: „A hogyság hogyol, a pedigség pedig pedigezik" stb.) Ez az elképzelés érdekes szószörnyetegek megalkotására sarkallhat, azonban szeretném ennél konzervatívabb mederben tartani a tárgyalást. Ezek a neologizmusok is azt mutatják, hogy egy főnévként azonosítható kifejezés illetőleg szókapcsolat furcsasága és szokatlansága ellenére is elfogadható, legfeljebb értelmezésért kiált.

> *A hogyság fogalma* központi szerepet játszik Quang Phuc Dong filozófiájában.

Hasonló a helyzet, ha összetett szavakat alkotunk:

A *kutyafogalom* bevezetése a cinológiába fellendítette ezt a szakterületet

A *szabadságfogalom* bevezetése a liberalisztikába új távlatokat nyitott

A *főlegfogalom* bevezetése az adverbiológiába újabban megnehezíti a kutatást

A *hogyfogalom* mellőzése a konjunktivisztikában nagy port ver fel mostanában

A németben is hasonló a helyzet, mint a magyarban: összetett szóval is kifejezhető a megcélzott szerkezet (érzésem szerint angolban ez meglehetősen nehézkes):

der Hundebegriff/*der* Meistensbegriff

Bár az összetett szavak képzése jóval nagyobb szabadságot enged meg a különféle szófajok kombinációjában, mint a genitívuszi szerkezet, mégis az elfogadhatatlan összetételek annak köszönhetik értelmetlenségüket, hogy sem lexikai sem pragmatikai alapon sem lehetséges jelentést alkotni a szavak egyedi jelentésének összetételével a szószerkezet és a mondat kontextusában. Az értelmetlen szerkezetek egyébként arra is felhívhatják újólag az elemző figyelmét, hogy intim kapcsolat *lehet* a nyelvtani szerkezet és az általa kifejezett tartalom között. Ezek a grammatikai megfigyelések első ránézésre azzal vannak összefüggésben, hogy csak olyan jelentésekkel tudunk fogalomra asszociálni (és ez megint csak a fogalom és jelentés szoros összefüggésére utalna), amelyek filozófiai értelemben valamilyen szubsztanciára, azaz nem tulajdonságra, relációra, vagy valami másfajta metafizikai entitásra utalnak. Az európai nyelvekben, tehát azokban amelyeken az általunk ismert filozófiai irányzatokat megfogalmazták, a szubsztancia jelentést általában főnevek fejezik ki; (főnevek más jelentéstípust/kategóriát is kifejezhetnek). Azonban, ha jobban megvizsgáljuk a helyes szerkezeteket, fel kell adnunk ezt a problémamentes álláspontot, hiszen a *futás, pirosság* nyilvánvalóan nem szubsztanciák, mint azt fentebb állítottuk, és az sem biztos, hogy az újonnan megalkotott *hogyság* fogalomnak megfelelő valóságegyüttes, ha sikerül ilyet lehatárolnunk, szubsztanciára jellemző sajátosságokkal rendelkezik. Ugyanakkor nem zárható ki, hogy a fogalomról, pontosabban annak szubsztancialitásáról nyilatkozó gondolkodókat erősen befolyásolta az a nyelv, amelyen írtak, és amelyekben a fogalomról

csak főnévként lehet beszélni. Vizsgáljuk meg ezekkel a szavakkal alkotott olyan szerkezeteket is, amelyekben a *fogalom* helyett a *jelentés* szó szerepel!

> *a* kutya/szabadság/semmi/futás/elemzés/fut/elemez/nagy/öreg/áldatlan/főleg/pedig/hogy/amely *jelentése*

Attól függően, hogy milyen mondatkörnyezetben szerepel lesz a szószerkezet értelmes vagy kevésbé elfogadható. Például,

> A 'kutya' jelentése nem más, mint szőrös, ugatós, harapós állat

mondat nem túl szerencsés, mivel az *a kutya jelentése* összetételben a *kutya* szó nem az állatra, hanem a 'kutya' szóra referál (márpedig mindenki számára több mint nyilvánvaló, hogy egy szó semmiképpen sem lehet szőrös, ugatós állat, pláne nem harapós); tehát jobb volna azt mondani

> A *kutya* szó jelentése nem más, mint 'szőrös ugatós, harapós állat'

Ez a mondat legfeljebb nyelvfilozófiai szempontból lehet aggályos: miért kellene azonosítani a szó jelentését azzal az entitással, amit leír. A többi szóval alkotott kapcsolat ugyanúgy viselkedik, mint az *a . . . fogalma* szószerkezetben, mivel az *a . . . jelentése* ugyanúgy birtokos szerkezet, amely két főnév viszonyát fejezi ki. Fontos különbség azonban, hogy míg az *a . . . fogalma* közvetlenül magát a jelöltet célozza meg, az *a . . . jelentése* összetétel bizonytalan abban a tekintetben, hogy vajon magát a jelöltet célozza-e meg vagy inkább az adott hangalakú szóról tesz valamilyen állítást. Nyilvánvaló ez a bizonytalanság, mivel *jelentése* csak szavaknak van, tehát

> A *kutya* jelentése nem más mint szőrös ugatós, harapós állat

mondatot hajlamosak vagyunk úgy értelmezni, hogy a *kutya* hangsor a 'kutya' szót képviseli és nem a szó jelöltjét, bármi is legyen az. Míg, például, *a főleg fogalma* értelmetlen, *a főleg jelentése* kifejezést többnyire úgy értelmezzük, hogy a 'főleg' szó jelentését értjük rajta. Nyilván némi képzelőerővel több-kevesebb sikerrel gyárthatunk olyan mondatokat is, amelyekben *a . . . jelentése* kifejezés közvetlenül a lehetséges referenst célozza meg. Például,

> ?A kutya jelentése (nem más, mint) a háziak állatbarátsága

A kutya jelentése az, hogy a háziak állatbarátok

Ez viszont átvezet egy másik problémához, amivel nem szeretnék foglalkozni, mivel nem segíti a bevezetőben említett probléma tisztázását: jelöltek és jelölők milyen fajtáival és viszonyával kell számolnunk. Összefoglalásként elmondható, hogy a fogalom szó nominális kapcsolatokban képes értelmes szerkezeteket adni, és ebből — valamint a már hivatkozott hagyományos nyelvtani vélekedésből — adódhat az az álláspont, miszerint a fogalom szubsztanciális természetű.

§11. Vizsgáljuk meg, nyelvileg hogyan fejezhetők ki különféle fogalmak és próbáljuk taglalni a szó-fogalom-entitás/(jelölt) viszonyt! Az íróasztalom barna, ami tulajdonság, azaz, a „barna" szóval kapcsolatba hozható fogalom tulajdonságfogalom. Ha a klasszikus elméletet teszem magamévá, akkor azt kell gondolnom, hogy van egy „dolog" az elmémben — ami talán képesség, de lehet, hogy reprezentáció, de akár gondolatnak is nevezhetjük (e lehetőségek egyáltalán nem zárják ki egymást) —, ami megmondja, hogy milyen jelenségek együttállása tartozik egyrészt a „barna szín", másrészt az „asztal" fogalma alá. Lehet, hogy ennek (azaz az együttállásnak) a formája egy gondolat, amit egyes kutatók valamilyen nyelven kívüli, nyelv előtti jelenségnek gondolnak el, de számomra a gondolat csak úgy képzelhető el, ha nyelvileg is meg van fogalmazva, azaz, ha valamilyen nyelven ki tudom fejezni, vagy kifejteni, vagy valaki más tudja taglalni, hogy miből is tevődik össze ez az együttállás, (azaz a gondolat alapjául szolgáló jelenségcsoport). (Az esetleges, nyelvi formát nem öltő fogalmakról ennél több mondanivalóm az alábbiakban sem lesz.) Tehát, ezek szerint a „barna színhez", valamint az „asztalhoz" (azaz, egy bizonyos típusú együttálláshoz, jelenségcsoporthoz) — nem mentális jelenséghez — kapcsolódik egy fogalom, ami viszont mentális, és ami — mint láttuk — szintén összetett, részekre tagolható jelenség (gondolat, reprezentáció stb.), és amely fogalmat, nemcsak a tartalmát, nyelvileg ki tudjuk fejezni. És most jön az egyik fontos kérdés, ami már fentebb is szóba került: vajon egy szó áll rendelkezésünkre, hogy egy fogalmat kifejezzünk, vagy inkább különféle kifejezési lehetőségekkel kell számolnunk. Ha az „egy fogalom—egy szó" megoldás hívei vagyunk, akkor el kell döntenünk, vajon a *barna* melléknév fejezi-e ki a fogalmat, vagy inkább a *barnaság* főnév; az *asztal* esetében ez a probléma nem merül fel, mivel — szerencsére — nincs választásunk. Ebben az esetben az a jelenség szorul magyarázatra, hogy ha egy szócsaládnak csak az egyik szava fejezi ki a fogalmat, akkor a többi szó miben más, azok mit fejeznek ki? Mondhatjuk ugyanis azt, hogy a *barna* szónak fogalma és je-

lentése is van oly módon, hogy a szó jelentése a fogalma, míg a *barnaság*nak csak jelentése van. Ekkor viszont a *barnaság* szó hogyan kapcsolódik ahhoz a jelenségegyütteshez, amit a „barna" fogalomban gondolunk el és amihez nyilvánvalóan köze van? Továbbá, hogyan értelmezzük a „jelentés" kifejezést? Vagy a többkifejezéses megoldás híveiként azt mondjuk, hogy mindkettő egyaránt kifejezi a fogalmat. Tehát a következő mondatban

Az íróasztalom barna

a *barna* melléknév fejezi ki a kérdéses fogalmat, és azon keresztül a valóságos „barna színt", míg az

A szeme barnasága megbízható jellemre utal

mondatban, viszont, a *barnaság* főnév. Ehhez a szócsaládhoz igék is tartoznak: *barnul, barnít*. A hagyományos logikán alapuló nyelvtani spekulációk és szófaji rendszerek az igéket a cselekvés ontológiai kategóriájának kifejezőjeként tartják számon. Ha elfogadjuk a szintaktikai kategória és fogalom azonosságát (mint ahogy, például, a prototípuselmélet követői teszik Margolis & Laurence szerint), akkor azt kell állítanunk a hagyományos grammatikai spekulációknak megfelelően, hogy e két ige jelöltje cselekvés — és nem tulajdonságfogalom — jóllehet a szóalakok morfológiai kapcsolata (melléknév∼főnév∼ige∼ige) mást is sugallhatna. Ha valóban így van, akkor ezek az igék a *barnulás* illetve a *barnítás* specifikus fogalmait valósítják meg, amelyek feltehetőleg az általános cselekvésfogalom alárendeltjei. Ugyanez a spekuláció, azonban, az előbbi példára is igaz kell, hogy legyen. Tehát, a *barna* melléknév jelöltje (amennyiben a vizsgált hipotézis értelmében a szavak és a fogalmak jelölő-jelölt viszonyban állnak) egy alárendelt esete az általános tulajdonságfogalomnak, amelynek egyik alárendeltje a *szín* szó jelöltje. De esetleg kétségeink támadhatnának abban a tekintetben, vajon a *szín* szóval összefüggésbe hozható fogalom nem szubsztanciafogalom-e inkább mint tulajdonságfogalom, mint ahogy abban a tekintetben is, hogy vajon e két ige valóban cselekvésfogalmat jelöl. Tekintsük a következő mondatokat!

Szépen barnulnak a grillcsirkék a sütőben
Szexbombák barnították egész nap a hátukat a szoláriumban

A *barnítás* minden kétséget kizáróan cselekvés (valaki, vagy valami úgy tevékenykedik, hogy a barna szín valamilyen foka álljon elő), míg

a *barnulás* nem az (valakivel, vagy valamivel megtörténik, hogy a barna szín lesz rá jellemző, részben vagy egészben, akarva-akaratlanul). Az, hogy mindkettő igével van kifejezve, legfeljebb csak a kétségeinket erősíti a hagyományos nyelvtani spekulációkkal kapcsolatban: abból, hogy valami morfológiailag és szintaktikailag ige egyáltalán nem következik, hogy cselekvésfogalmat fejez ki. Ugyanígy, mint az előző mondatokból kiderülhetett, a *barnulás* és *barnítás* főnévségük ellenére sem entitásra, vagy szubsztanciára utalnak, mint azt számos grammatikus vélelmezi a hagyományos szemléletre hivatkozva. Viszont a *barna* és *barnaság* szavak azt mutatják, hogy két különböző szintaktikai osztályba sorozott szó ugyanarra a fogalomra utalhat — legalábbis az az intuícióm, hogy mindkét kifejezés tulajdonságra utal. (A tárgyalást tovább bonyolíthatnánk, vagy mélyíthetnénk, ha bevonnánk a *barnállik* és a *barnás* szavakat is.) Továbbá, az eddigi példák arra is mutatnak, hogy ha a *jelentés* kifejezést használjuk a *fogalom* helyett, a spekuláció ugyanúgy elfogadható (vagy elfogadhatatlan), továbbá, problémamentesebb állításokat kapunk, nem mintha a *jelentés* egyértelműbb volna mint a *fogalom,* hanem inkább azért, mert a jelentés kapcsán nem feltétlenül kell metafizikai és episztemológiai mélyfúrásokat végezni. Jól érzékelhető, hogy a fenti fejtegetésben állandó elem a különböző szempontok keveredése: hol a fogalomból, hol a szóalakból, hol egy vélelmezett valóságegyüttesből, hol pedig a jelentésből indulunk ki. Miből induljunk ki tehát? Mi a jelölt és mi a jelölő? A szó-fogalom perspektívából a szó látszik a jelölőnek, míg a fogalom a jelöltnek. Azonban a fogalom sem az „igazi" dolog, azaz, nem ő az igazi jelölt, végső soron nem érte szól a szó, hanem a fogalom — ha hiszünk szerzőinknek — a valóság megfelelő aspektusának csak — úgy tűnik, néma — jelölője, mivel a szubsztancia, tulajdonság, viszony stb., illetve az ezek alá tartozó specifikus jelenségegyüttesek a jelöltek. Tehát, vannak a valóságnak bizonyos sajátos vonásai, amik egy fogalomba tömörülnek; ebből a szempontból teljesen immateriális, vajon empirista vagy geachi alapon jön-e létre a fogalom —, majd pedig ez a fogalom nyelvi kifejezést nyer egy szóalakban. (A *majd* szó nem időbeli, hanem logikai rendezést jelent, ha valamilyen rendezésre egyáltalán szükség van, de a kifejtéshez mindenképpen szükségesnek látszik.) Ez az elmélkedés addig tartható, amíg be nem vonjuk a vizsgálatba a szavakat. Ha az egymással morfológiai, és tegyük hozzá: szemantikai kapcsolatban álló szavakból indulunk ki, akkor már jóval kacifántosabb a helyzet. Vagy kitartóan ragaszkodunk ahhoz, hogy (1) minden szónak megfelel egy fogalom, tehát a jelölő-jelölt viszonyt kivétel nélkülinek tartjuk. Ebben az esetben, tehát, a szó felől tekintjük a kérdést, és azt kell megmagyarázni, hogy a valóság mely sajátos vonásainak felelnek meg olyan lexikai és grammatikai elemek, illetve kifejezések, mint például, *hogy, -ság/ség, hovatovább, legott,*

leg. . . bb, fogtok stb. (Ezek a példák észrevétlenül vezethetnek át a fogalom tárgyalásától a grammatikai szerkezetek jelentéséhez. Például, van-e egyáltalán jelentése az egyes nyelvtani funkcióknak, úgy mint alanynak, tárgynak, határozónak stb., és ha igen akkor mi az. Martinet (1960) szerint ugyanis az egyes nyelvtani funkcióknak csakúgy mint a lexikai elemeknek a valóság egyes vonásaival van kapcsolata. Sajnálatos módon ez az elképzelés sincs kidolgozva.) Másképpen, ha az említett nyelvi elemek fogalmak jelölői, amik viszont a valóság egyes sajátosságainak jelölői, akkor a fenti nyelvi kifejezések fogalmaikon keresztül kapcsolódnak, vagy kellene, hogy kapcsolódjanak a nem nyelvi világhoz. És erről a kapcsolatról jó volna valamit tudni. Ha viszont az a véleményünk, hogy (2) a szókincs nagyobb, mint a fogalomkincs, azaz, egy-egy fogalmat több szó fejez(het) ki, akkor a morfológiai és szemantikai kapcsolatban álló szavak fogalmakhoz való viszonyáról kellene koherens állításokat tennünk, azaz, azt kellene értelmesen és főleg ellentmondásmentesen taglalni, hogy a különféle szintaktikai és szemantikai tulajdonságokkal rendelkező szavak hogyan kapcsolódnak ugyanahhoz a fogalomhoz, illetőleg egy szócsalád egyes tagjai mely fogalomhoz/fogalmakhoz kapcsolódnak. Tovább bonyolítja a helyzetet, ha a jelentést is bevonjuk a vizsgálódásba. Ha úgy találjuk, hogy a szókincs és a fogalomkincs egymást lefedi, akkor akár azt is mondhatjuk, hogy a fogalom a szó jelentése, és ebben az esetben a jelentés, mint szakkifejezés nem végez semmiféle munkát (de bizonyára kapcsolódik hozzá fogalom). De ha a másik álláspontra esküszünk, akkor a jelentést is el kell helyeznünk valahol, hacsak nem vagyunk megátalkodott jelentéstagadók.

§12. Nyelvtani szempontból a fogalom, mint látható a főnevekkel hozható problémamentesen kapcsolatba, még akkor is, ha képzett főnévről van szó. A *kutya* szó nyilvánvalóan szubsztanciát jelent, szubsztanciára referál, pontosabban fogalmazva, a *kutya* szóval megjelölt entitás szubsztancia, és ezért nem meglepő, hogy különféle tulajdonságai vannak (vagy ha így jobban tetszik: tulajdonságokat látunk benne), amelyeket taglalni lehet, és ennek a taglalásnak hagyományosan fogalomelemzés a neve. (Az előző mondat kiválóan példázza, mennyire nehéz elkerülni a kategóriák összezagyválását: a szóról a jelentésre, illetve a referenciára ugrunk, majd a tulajdonságok említése mellett a fogalomra térünk át. . . Így keverednek (más szövegekben is) nyelvi, nyelvtani, mentális és metafizikai kategóriák intuitív főzetté.) A *futott, táncolt* igékhez — a fenti spekulációk értelmében — nem társítunk fogalmakat, nem szubsztanciát fejeznek ki, mégis főnévi alakjukhoz — *futás, tánc* — nem okoz problémát fogalmat (*a* futás/tánc *fogalma*) és ezzel együtt definíciót társítani, de ennek ellenére — hacsak nem

hiszünk abban, hogy a grammatikai képzés egyben metafizikai képzést is magában foglal a *fut/táncol* igékből képzett főnevek sem szubsztancianevek. A Magyar értelmező kéziszótár szerint (1982 : 1331), például

> *tánc*, fn. **1.** Rendsz. zene v. ének ütemére végzett ritmusos mozgás (mint művészet v. szórakozás)...

A MÉK a *tánc* főnevet végső soron egy másik (jelzett) főnévvel definiálja. A *táncol* igének viszont már nincs definíciója, csak különféle kifejezésekben mutatják meg a szó használatát:

> *táncol* tn (és ts) ige **1.** (ts is) (Táncot) jár... **2.** (Táncot) ad elő... (MÉK: 1332)
> *fut* tn (és ts) ige **1.** Szaporán ugró léptekkel gyorsan halad... (MÉK: 442)
> *futás* fn **1.** Az a cselekvés, tény, hogy vki, vmi fut... (MÉK: 443)

A *fut* igét egy másik, „jelzett" igével definiálja, a *futás* főnévről pedig megmondja milyen típusú metafizikai entitás az, amit az ige kifejez (cselekvés, tény). Az ige definíciója egyrészt a szó használatát mutatja be szinonim kifejezés segítségével, a nyelvtanilag főnévként kódolt szóról vagy annak tartalmáról.

§13. A fenti fejtegetéseket a következőképpen kívánom lezárni. Véleményem szerint fogalmak, mint önálló, saját jogon létező gondolkodási és/vagy nyelvi elemek nincsenek. Amit fogalomnak szoktak nevezni, az — számomra úgy tűnik — nem más, mint taglalt jelentés, azaz, egy tudományos kontextusban használt szó — többnyire főnév — jelentésének a magyarázata, beleértve ebbe azt is, amikor az eredeti (hétköznapi) jelentéshez képest új elemekkel is bővül a szó tartalma. Különböző szövegekben felbukkan a tudományos és köznapi fogalom megkülönböztetése. Van-e értelme ennek? Ha mindenképpen ragaszkodni akarunk a fogalom szó használatához, akkor annak csak tudományos diskurzusban van értelme, persze csak akkor, ha a fogalomként azonosított szavakat meghatározzuk, azaz, kibontjuk jelentésük pontos tartalmát. Ezek szerint tehát csak tudományos fogalom van, amennyiben a fogalom szót 'definiált jelentés' értelemben használjuk. Ez természetesen azt is jelenti, hogy egy tudományos szövegben használt szavaknak csak egy része fogalom is egyben. Ebből az következik, hogy nem sok értelme van azonosítani a fogalmat a szó jelentésével, mivel a fogalom maga nem más mint explikált jelentés. Vagyis arra a kérdésre, hogy vajon a szó jelentése-e a fogalom, azt válaszolom, hogy a fogalom tartalma a vele fonológiailag azonos szó jelentése vagy

annak szűkített vagy bővített változata. Vannak továbbá a fogalom szóval összetételek, amelyeknek szintén nagy fontosságot tulajdonítanak egyes gondolkodók. Így, például, a fogalomelemzés, ami ezek szerint nem más, tehát, mint egy tudományos elmélet számára kitüntetett szó/szavak jelentésének definíciója, illetőleg a definíció elhelyezése az elméletben. A fogalmi gondolkodás kifejezés eszerint az absztrakt gondolkodást jelenti, míg a konceptuális struktúra/séma összetételek nem jelentenek többet, mint koherens gondolkodáson alapuló rendszert vagy rendszeralkotást, amelyben a szavak tudatos jelentéshasználata fontos szerepet kap.

HIVATKOZÁSOK

Ajdukiewicz, Kazimierz. 1958. *Abriss der Logik.* Berlin: Aufbau Verlag.

Carnap, Rudolf. 1928. *Der logische Aufbau der Welt.* Leipzig: Felix Meiner Verlag.

Cook-Wilson, John. 1926. *Statement and Inference.* Oxford: Clarendon Press.

Geach, Peter. 1957. *Mental Acts.* London: Routledge and Kegan Paul.

Gellner, Ernest. 2005 [1959]. *Words and Things.* London and New York: Routledge.

Hartmann, Nicolai. 1972. *Lételméleti vizsgálódások.* Budapest: Gondolat.

Hegel, Georg Wilhelm Friedrich. 1979. *A logika tudománya, I, II.* Budapest: Akadémiai Kiadó.

Juhász József, Szőke István, O. Nagy Gábor, Kovalovszky Miklós (ed.). 1982. *Magyar értelmező kéziszótár.* Budapest: Akadémiai Kiadó.

Leech, Goeffrey. 1974. *Semantics.* New York: Penguin.

Margolis, Eric — Stephen Laurence. 2006. Concepts. In: Edward N. Zalta (szerk.) *The Stanford Encyclopedia of Philosophy (Spring 2006 Edition).* plato.stanford.edu/archives/spr2006/entries/concepts/

Martinet, André. 1960. Elements of functional syntax. *Word* 16.

Millikan, Garrett Ruth. 2000. *On Clear and Confused Ideas. An Essay about Substance Concepts.* Cambridge: Cambridge University Press.

Sandmann, Manfred. 1979. *Subject and Predicate: A Contribution to the Theory of Syntax.* Heidelberg: Winter.

Schaff, Adam. 1967. *Bevezetés a szemantikába.* Budapest: Akadémiai Kiadó.

Strawson, Peter Frederick. 1974. *Subject and Predicate in Logic and Grammar.* London: Methuen.

Vojsvillo, J. K. 1978. *A fogalom.* Budapest: Gondolat.

Wartofsky, Marx W. 1977. *A tudományos gondolkodás fogalmi alapjai.* Budapest: Gondolat.

Marosán Lajos
marosan.lajos@gmail.com
Eötvös Loránd University
Budapest

A cognitive semantic approach to structural focus in the Hungarian clause*

Gábor Tolcsvai Nagy

1. The linguistic categories of structural focus and topic have been investigated by formal linguistics in detail. This theoretical and methodological framework defines the two categories as structural positions, filled in by logical operations (cf É. Kiss 2008), or as factors in information structure (see Lambrecht 1994, Krifka 2008). In what follows, I give a functional cognitive semantic draft of the structural focus, concentrating on the contrastive focus (I do not deal with more specific subclasses of focus). The present interpretation is functional in so far as it takes the perspectival nature of the construal processes of the speaker and the hearer as fundamental and cognitive in so far as it includes the semantic construal processes of the windowing of attention and their results, besides the conceptual elaboration.

In every linguistic interaction, the speaker directs the hearer's attention (with her or his own) to some entity, from a definite perspective, ie the speaker elaborates the entity conceptually from a specific point of view. The processing of the linguistic units (clauses, discourses) is completed in every moment in a restricted conceptual domain, specifying the scope in which something can be conceptualized (Langacker 1987 : 118–120, 257–262, 2001 : 144, Talmy 2000 : 257–309). The conceptual domain attained currently in such a way functions as a complex mental structure, like a window in visual perception, through which the conceptualizer perceives one part of the world, focusing on one thing or event in relation to some entities in the background. To go on with the analogy: things change, and events happen within the frame of the window. Moreover, even the win-

* I am grateful for the help and extensive comments of Nóra Kugler and Mária Ladányi on an earlier version of the paper. The research was supported by OTKA (Hungarian Scientific Research Fund), grant K 100717. Certainly, all responsibility is mine.

dow itself, the attentional frame changes. These circumstances determine how individual concepts are constrained in one moment of processing, and help to designate the entity in the focus of attention.

The focusing of attention is completed in the interaction of the speaker's and the hearer's current perspective. Factors of the interaction are the currently activated knowledge or ignorance, the predictable or diverse, opposite knowledge of the speaker and the hearer. Concentrating only on thing-like entities: the thing in the focus of attention in a wider scope (at least within a clause) functions as topic, with previous activation (with referential accessibility through anaphora), and as reference point (with thematic importance and cataphoric nature) or with inherent topicality (according to cognitive hierarchies) (see Givón 2001: II/226, Langacker 1987, as well as Silverstein 1981, Taylor 1996). Structural focus and contrastive focus in particular arises within the focusing of attention from the relation of the speaker to the hearer's expectations, the predictability or unpredictability of her/his current knowledge, always in a current situation, in a discourse universe. The speaker and the hearer, while changing roles, jointly form the result of the focusing of attention, ie the concentration on an entity, in a negotiation process.

2. Linguistic interaction aims at communicating content, at opening up portions of human sense, in joint attentional events. These processes are completed via linguistic structures.

The privileged linguistic structure of communicating content is the sentence, or with a more functional term: clause. The presupposed notion of clause comprises a semantic structure, a phonologic structure, and a more abstract, more schematic morpho-syntactic structure. The parallel correspondences of these structures give the essence of the clause in the functional models. The complexity of the clause can be described in diverse ways, eg focusing on the syntactic structure with an abstract semantic content (as in construction grammar; cf Goldberg 2006, Croft 2001), obtaining clause from the semantic structure (as in Langacker's cognitive grammar; cf Langacker 1987, 1991, 2009), concentrating on the correspondences between semantics and syntax (and also pragmatics, as in Givón 2001).

A clause never stands "alone"; it functions as a structure in a processed situation (in a current discourse space, a discourse universe). In the default case the basic structure is the clause (and not sentence), a unit of spontaneous discourse as well as planned written texts.

The prototypical clause has the following features (see Langacker 2008 : 354–405). On the semantic pole it maps an event (a scene), with two participants designated. Participants are designated prototypically by nouns conceptualizing things. The clause maps the relation between the two participants temporally. Temporal relations are expressed by verbs, designating an interaction with energy transfer or change (in the physical or metaphoric sense) between two or more participants.

The event expressed in the clause is construed by a conceptualizer, particularly the speaker, from a specific perspective that directs the speaker's and the hearer's attention. Certain linguistic expressions focus the speaker's and the hearer's attention on particular things and their relations in the discourse universe. One component of construal is focusing in a wider conceptual domain (or in domains), the selection of the content to be expressed linguistically, in foreground—background relations.

The speaker and the hearer focus on one of the semantic (conceptual) components of the clause, most often one of the named participants. The attention is focused even in a clause with neutral intonation and stress:

(1) A tűz kialudt.
'The fire died out.'

(2) A portás becsukta a kaput.
'The porter closed the gate.'

(3) Az igazgatónak tetszik a titkárnő.
'The director likes the secretary.'

(4) Jánost érdekli a relativitáselmélet.
'John is interested in the theory of relativity.'

In (1)–(4) attention is directed on one particular participant (underlined in the examples), through specific cognitive processes, above all by prominence and accessibility hierarchies. Prominence and accessibility contribute to perspectivization, to the designation of the one participant that is elaborated conceptually by the others (cf Langacker 1987 : 120–132, 2008 : 55–85, Talmy 2000 : 257–309, 311–343, Taylor 1996). The entities placed in the focus of attention by the speaker in (1)–(4) are easily accessible, more easily so than the other participants (if there are any), because they are in a front position on the prominence and accessibility hierarchies, compared to the other ones. This way of attention focusing is not altered, only completed by flexible word order in Hungarian, in (1)–(4) with sentence initial

position. In other words: in Hungarian declarative clauses without a structural focus, the word order position of the entity in the focus of attention does not (or does not necessarily) influence its attentional status.

In what follows, I apply the functional cognitive framework outlined above in the interpretation of structural focus in the Hungarian language. The important results of the formal investigations of Hungarian are based on the idea of autonomous syntax and truth conditional semantics (see, among others, É. Kiss 1998, 2002, 2008, Kenesei 1998, in a different manner Kiefer & Gyuris 2006, Kálmán 2001). For the first functional cognitive approaches to the Hungarian language see Imrényi (2008).

3. Attention is focused prototypically on a participant conceptualized as a thing and expressed by a noun as a default. Clauses in natural discourse usually elaborate one new information unit (cf Givón 2001: II/222, Chafe 1976, 1994 : 108–120). One characteristic of the semantic structure of the linguistic expressions (eg words) plays an important role in the windowing of attention. The semantic structure of the concept of things is processed in its immediate scope in a clause, not in its maximal scope (cf Langacker 1987 : 118–120). For instance, the immediate scope of the noun *hand* is ARM, its maximal scope is BODY. Also, the semantic content of the noun is bounded, constrained: as a part of its semantic structure, its substructures are abstracted concepts forming a network (a complex matrix), thus a specific noun as a category and as an epistemically grounded instantiation, too, is delimited from other concepts. In (1)–(4), the epistemically grounded concepts of things in the focus of attention comprise their separation from other concepts as a default, without any specific marking. This detachment is not specific, ie it does not contain a spreading activation that would determine the conceptual domain (or domains) to be activated by some kind of motivation attached to the concept in the focus of attention (see Deane 1992), or if it contains some element of association, the conceptual delimitation does not need distinct marking.

In these cases the level of presupposition, assertion, accessibility and informational probability of the focused participant in the clause is high both for the speaker and the hearer within the current discourse space. In other words, the speaker's expectations about the hearer's knowledge (almost) agree with the hearer's knowledge (or ignorance). This is the neutral, normative context (Givón 2001: II/223).

In other cases the conceptual delimitation does need distinct marking: the conceptual delimitation of the participant in the focus of attention should be designated within the semantic structure of the clause, to sepa-

rate it from other participants of the events. These participants are the individuals associated contextually, in a conceptual domain conceptualized by the speaker from a specific perspective. In (5a), identical to (2), both the contextual conceptual detachment of *portás* 'porter' and *kapu* 'gate' is sufficient without any marking, because the speaker's expectations about the hearer's knowledge agree with the hearer's knowledge, according to the speaker's judgement. This does not hold in the case of (5b) and (5c):

(5) a. A portás becsukta a kaput.
'The porter closed the gate.'
b. A PORTÁS csukta be a kaput (és nem a sofőr).
'It was the porter who closed the gate (and not the chauffer).'
c. A KAPUT csukta be a portás (és nem az ablakot).
'It was the gate the porter closed (and not the window).'

In (5b) *kapu* 'gate' is an activated and bounded participant of the event expressed in the clause both for the speaker and the hearer within the current discourse space, but the agent of the action is not: for the speaker *sofőr* 'chauffer' is the agent, for the hearer (also a speaker in a dialogue) it is the *portás* 'porter' who acts. In (5c) *portás* 'porter' is an activated and bounded participant of the event expressed in the clause both for the speaker and the hearer within the current discourse space, but the patient of the action is not: for the speaker *ablak* 'window' is the patient, for the hearer (also a speaker in a dialogue) it is the *kapu* 'gate' that suffers the act. That is, in both cases of (5b) and (5c) there is a contrast between the activated knowledge and expectations of the speakers and hearers. They designate this contrast through the focusing of attention, by conceptualizing the focused entity in relation to another entity, according to their two diverse activated segments of knowledge. Conceptualization takes place within the processing of the discourse universe, the current discourse space, based on the relation between the current hearer's expectations and the predictability of the current speaker's knowledge. A simple dialogue gives a clearer picture of the perspectives and attention directing of the speakers and hearers:

(6) A: János egy órakor megérkezett.
'John has arrived at one o'clock'
B: Nem, egykor ZSUZSA érkezett meg.
'No, it was Susan who arrived at one o'clock.'

There is a contrast between the knowledge portions activated by the two speakers in dialogue (6). Both of them speak about a series of events

with two participants, wherein one event is connected to an exact date. The participants of the event are known to the interlocutors, as is the event (the arrival). Only the link between the right participant and the right date differs for the two interlocutors. For interlocutor A participant *János* arrived at the mentioned time (1 pm, in the first turn). The attention focusing on this participant (*János*) can be completed with the background of concepts already activated in the previous sections of the discourse and discourse space, without particular designation, the conceptual delimitation needs no specification, epistemic grounding is sufficient. In the second turn of the dialogue, interlocutor B construes a contrast: according to her/his knowledge it was *Zsuzsa* who arrived at 1 pm. The participant named *Zsuzsa* was already activated in the discourse or the discourse universe. The conceptual scoping of the participant named *Zsuzsa* in the discourse is possible only in contrast with the other participant (*János*) mentioned in the first turn of the dialogue.

The conceptual delimitation is explicated here: from a contextually, within the current discourse space construed or schematically activated category [it is X and not Y], in a more general way: [X in contrast with Y and Z]. This clause internal conceptualization is stressed and explicit, because it is not part of the presuppositions, expectations and information predictability derivable from the comprehension processes of one of the speakers (speaker B) in advance, in contrast to the other speaker (speaker A). In the Hungarian language the semantic structure focused in that way is designated prototypically by main clausal stress and preverbal position, and the postverbal position of the elements categorized as verbal modifiers. Nevertheless, this schema should be investigated on corpus data to be validated, and to find out the real spectrum of syntactic and semantic variability. It has to be noted that stressed focusing can be completed also on grammatical elements, as in (7):

(7) A: Nem láttad a zseblámpámat?
'Have you seen my flashlight?'
B: A komódban van.
'It is in the chest of drawers.'
A: Nincs a komódon.
'It is not on the chest of drawers.'
B: A komódBAN van, nem a komódON.
'It is IN the chest of drawers and not ON it.'

The focus (structural focus) interpreted this way can be described within context, within the universe of discourse. Part of the discourse uni-

verse is the set of concepts, whether elaborated or schematic, activated by the conceptualizers. An example, discussed repeatedly in the Hungarian literature, may be described in such a way:

(8) János a PADLÓN aludt.
'János slept ON THE FLOOR.'

The speaker in this clause not only presupposes or takes already activated in the given discourse space that there are other participants in the represented events besides *János* for the conceptualizers. But the clause also contains that floor as the place of sleeping does not belong to the concept of SLEEPING, rather the opposite. *Padló* 'floor' has to be dissociated and focused as a concept, because it cannot be expected on the basis of the informational predictability arising from general schematized knowledge (the schema of SLEEPING), above all not from the hearer's side. The speaker's schematic knowledge has been modified by the event to be expressed. The construction with structural focus and main stress takes this contrastive character in the foreground in elaborating the concept of *János* (others slept in other places). Nevertheless, the variability of the interpretation of (8) depends on the context: this clause has a neutral variety whereby the conceptual scope of *János* prevails in its default version, the conceptual focusing is not designated in particular (eg János was alone; still he slept on the floor).

It has to be noted once more that structural focus interpreted in the framework outlined above does not stand on its own, in spite of the conceptual isolation and foregrounding: the linguistic unit functioning as focus is part of the semantic structure of the clause (by partial correspondences, valence relations), and at the same time it is topic (in the cognitive sense; cf Givón 2001: II/229) as designating an already activated concept in the universe of discourse. The activated status does not need direct lexical naming; it can be the result of a semantic activation, the processing of a schema, a spreading activation based on the previous discourse parts or the processed discourse universe without an overt linguistic expression (cf Chafe 1994). The prototypical structural focus is built on the contrast between the speaker's and the hearer's presuppositions and expectations. What counts as activated unit in the discourse (with topic status) for the speaker, for the hearer may be non-activated, not known or contrary to her/his knowledge, not fitting to her/his expectations. Still, in the default case, the contrastive focus is founded in the previous discourse parts, and it is an accessible topic through anaphor.

The cognitive and communicative configuration with the conceptual scoping and delimitation outlined above is extended to other, similar construals. Focusing, like those mentioned before, is related to epistemic grounding, but is not identical to it.

4. Structural focus has various instantiations in Hungarian, too (cf Givón 2001: II/224):

a. Main stress + word order

(9) A FIÚ csukta be az ablakot.
'It was the boy who closed the window.'

(10) Az ABLAKOT csukta be a fiú.
'The boy closed the window (as opposed to closing something else).'

(11) BECSUKTA a fiú az ablakot.
'The boy closed the window (as opposed to doing something else to it).'

b. Cleft

(12) A FIÚ az, aki becsukta az ablakot.
'It is the boy who closed the window.'

(13) Az ABLAK az, amit becsukott a fiú.
'It is the window that the boy closed.'

c. Pseudo-cleft

(14) Az a valaki, aki becsukta az ablakot, a FIÚ.
'The person that closed the window is the boy.'

Version (a) is the least constrained semantically and syntactically, versions (b) and (c) do not include the formation of the verb.

5. The syntactically flexible Hungarian word order is based on iconicity: it is the semantically structured sequence of activated concepts, wherein a linguistic unit activated earlier may involve the later ones in the conceptual domain created by spreading activation, opened by itself. The clause

initial units have a determining function, although later clausal elements may reinterpret the initial conceptual status. Structural focus is instantiated with a more rigid word order, and a more restricted scope within the clause in the perspective of the windowing of attention.

Word order has a specific semantic function in the instantiation of the preverb + verb or other modifier + verb structures. The preverb profiles the spatial component or one of its metaphorical extensions of the process designated by the verb. The root verb connects the designated temporal process directly to the concept of the thing (a figure) specified in the dominion of the verb, epistemically grounded, maintaining the conceptual foregrounding (cf Tolcsvai Nagy 2005).

6. Summary. The speaker directs the hearer's and her/his own attention to a clausal component in every clause. The focused thing in the clause is constrained as a default for both the speaker and the hearer, corresponds to their expectations, and is separated from other concepts without specific overt marking.

The focusing of attention has diverse functional instantiations, according to the symmetry or asymmetry of the speaker's and the hearer's expectations and presuppositions, the contextual predictability and the degree of focusing.

In the syntactic category identified as structural focus the entity focused conceptually by the speaker does not correspond to the hearer's expectations and presuppositions, thus the focused entity should be separated and delimited in a contextually determined conceptual domain. The instantiations of focusing are directed by semantic and pragmatic factors.

REFERENCES

Chafe, Wallace. 1976. Givenness, contrastiveness, definiteness, subjects, topics and points of view. In: Charles N. Li (ed.), *Subject and topic.* London: Academic Press. 25–55.

Chafe, Wallace. 1994. *Discourse, Consciousness, and Time: The Flow and Displacement of Conscious Experience in Speaking and Writing.* Chicago & London: The University of Chicago Press.

Croft, William. 2001. *Radical Construction Grammar: Syntactic Theory in Typological Perspective.* Oxford: Oxford University Press.

Deane, Paul D. 1992. *Grammar in Mind and Brain: Explorations in Cognitive Syntax.* Berlin & New York: Mouton de Gruyter.

É. Kiss, Katalin. 1998. Identificational Focus versus Information Focus. *Language* 74 : 245–273.

É. Kiss, Katalin. 2002. *The Syntax of Hungarian.* Cambridge: Cambridge University Press.

É. Kiss, Katalin. 2008. Topic and focus: two structural positions associated with logical functions in the left periphery of the Hungarian sentence. *Acta Linguistic Hungarica* 55/3–4 : 287–296.

Givón, Talmy. 2001. *Syntax. A functional-typological introduction.* Amsterdam & Philadelphia: John Benjamins.

Goldberg, Adele E. 2006. *Constructions at work. The nature of generalization in language.* Oxford: Oxford University Press.

Imrényi András. 2008. Szerkezeti fókusz — pragmatikai típusjelölés? *Általános Nyelvészeti Tanulmányok* XXII: 203–239.

Kálmán László (ed.). 2001. *Magyar leíró nyelvtan: Mondattan I.* Budapest: Tinta Könyvkiadó.

Kenesei István. 1998. Adjuncts and arguments in VP-focus in Hungarian. *Acta Linguistica Hungarica* 45 : 61–88.

Kiefer Ferenc and Gyuris Beáta. 2006. Szemantika. In: Kiefer Ferenc (ed.), *Magyar nyelv.* Budapest: Akadémiai Kiadó. 175–221.

Krifka, Manfred. 2008. Basic notions if information structure. *Acta Linguistic Hungarica* 55/3–4 : 243–276.

Lambrecht, Knud. 1994. *Information structure and sentence form.* Cambridge: Cambridge University Press.

Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar. Volume I.* Stanford: Stanford University Press.

Langacker, Ronald W. 1991. *Foundations of Cognitive Grammar. Volume II. Descriptive Application.* Stanford, CA: Stanford University Press.

Langacker, Ronald W. 2001. Discourse in Cognitive Grammar. *Cognitive Linguistics* 12/2 : 143–188.

Langacker, Ronald W. 2008. *Cognitive Grammar: A Basic Introduction.* Oxford: Oxford University Press.

Langacker, Ronald W. 2009. *Investigations in Cognitive Grammar.* Berlin & New York: Mouton de Gruyter.

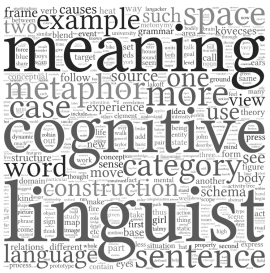
Silverstein, Michael. 1981. Hierarchy of features and ergativity. In: Robert M. W. Dixon (ed.), *Grammatical categories in Australian languages.* Canberra: Australian Institute of Aboriginal Studies. 227–244.

Talmy, Leonard. 2000. *Toward a cognitive semantics. Vol. I: Concept structuring systems.* Cambridge, MA: The MIT Press.

Taylor, John R. 1996. *Possessives in English: An exploration in cognitive grammar.* Oxford: Oxford University Press/Clarendon.

Tolcsvai Nagy Gábor. 2005. Kognitív jelentéstani vázlat az igekötős igéről. *Magyar Nyelv* CI: 27–43.

Gábor Tolcsvai Nagy
tnghu@hotmail.com
Eötvös Loránd University
Budapest



Cognitive linguistics*

Zoltán Kövecses

There are many different ways in which cognitive linguistics can be characterized for the purposes of a basic introduction to the field. I personally believe that the most salient idea that distinguishes cognitive linguistics from other kinds of linguistics is the attempt to describe and explain language use with reference to a number of cognitive processes. Some of the cognitive processes that cognitive linguists use in their accounts of language are common knowledge in cognitive psychology and cognitive science, while others are more hypothetical in nature (see Gibbs 2000). All of these cognitive processes serve human beings to make sense of their experience, including language. That being so, cognitive linguistics is a much more general enterprise than just the study of language. In my view, it is a scientific endeavor to account for the meaningfulness of human experience, be it linguistic, social, cultural, or whatever. For this reason, the term *cognitive linguistics*, I feel, is a misnomer, which limits the scope of cognitive linguistics to issues of language only.

In the present introduction, I will briefly describe and exemplify the most important cognitive processes that cognitive linguists have found useful in their accounts of a variety of linguistic phenomena. In this sense, this is only a partial introduction, which leaves out of consideration a large and increasing body of knowledge cognitive linguists have accumulated of a variety of nonlinguistic areas of experience (but see Kövecses 2006).

Categorization of experience

Human meaning-making depends in part on how we categorize entities and events in the world; that is, on the nature of conceptual categories, or concepts, we have concerning these entities and events. The classical view

* Parts of this paper appeared in Kövecses 2005.

of categories is based on the idea of essential features. In order to have a conceptual category, the members of the category must share certain essential features. On this view, categories are defined by essential features, or, in more modern terminology, by necessary and sufficient conditions (Fillmore 1975). Based on empirical work in cognitive psychology (see, eg Rosch 1978), a number of authors began to criticize the classical view of categorization. Fillmore (1975), Lakoff (1987), Taylor (1989), and others raised serious objections concerning the validity of such an approach to categories and offered a radically new alternative, which became known as "prototype categorization." In a way, the theory of prototype categorization became the cornerstone of cognitive linguistics. In the new rival view, categories are defined not in terms of necessary and sufficient conditions, but with respect to prototypes and various family resemblance relations to these prototypes.

Philosopher of language John Austin extended the notion of categories to the senses of words (see Lakoff 1987). That is to say, Austin thought of the various senses of a word as a category of senses that is organized around a prototypical sense. He showed by way of analyzing the different senses of words that one of the senses is central, while others are noncentral, or peripheral. As we know well today, it is very common for words to have a central prototypical sense with the other senses deriving from that sense either through metonymy or metaphor.

The notion of prototype was extended to "linguistic categories" by cognitive linguists; that is, to the terms we use to describe language. Linguistic categories include noun, verb, modifier, phrase, clause, sentence, etc. The same question that can be raised in connection with everyday categories can be raised in connection with grammatical categories: Are they defined by a set of essential properties or by certain prototypes? Recent work in this area suggests that it makes sense to think of these categories as prototype-based as well (Lakoff 1987, Taylor 2003).

It seems reasonable to believe then that the notion of prototype-based organization in categories applies to three distinct levels or areas:

categories for everyday concepts;
categories for senses of words;
categories for linguistic concepts.

Work in cognitive linguistics and psychology has indeed shown that in all three of these areas the categories we possess have an internal struc-

ture that is organized around prototypes (see, eg Gibbs et al. 1995, Taylor 1989, 2003).

Framing knowledge

Much of our knowledge about the world comes from the categories we have. Categories are mentally represented as frames, schemas, or models (see, eg Schank & Abelson 1977; Fillmore 1982; Langacker 1987; Lakoff 1987). The terminology is varied (see Andor 1985), but the idea behind it is roughly the same. We can use the following working definition of frames: A frame is a structured mental representation of a coherent organization of human experience. Perhaps the best known slogan for this idea is Charles Fillmore's paradigm-setting statement: "Meanings are relativized to scenes [ie frames]." Additional characteristics of frames include that in most cases they are not defined by necessary and sufficient features and that they often consist of several entities related to particular actions or events. An early attempt to look at meaning in language in this light is Fillmore's case grammar, which he later developed into his "frame semantics."

However, these ideas become important in the study of almost any facet of life — and not just language. We are trying to make sense of the world even when we are not consciously aware of this, and the world as we experience it is always the product of some prior categorization and framing by ourselves and others. As a matter of fact, it is now a well established fact in cognitive linguistics and psychology that different individuals can interpret the "same" reality in different ways. This is the idea that became known in cognitive linguistics as "alternative construal" (see, eg Langacker 1987).

Metonymic thought

Cognitive linguists do not think of metonymy as a superfluous linguistic device whose only function is to avoid literalism and to make the expression of meaning more varied. Kövecses & Radden (1998) offer the definition of metonymy as follows:

> Metonymy is a cognitive process in which a conceptual element, or entity (thing, event, property), the vehicle, provides mental access to another conceptual entity (thing, event, property), the target, within the same frame, or idealized cognitive model (ICM).

Thus, for example, given the RESTAURANT frame, or idealized model, the speaker of the sentence "The *ham sandwich* spilled beer all over himself" directs attention, or provides mental access, to the conceptual element PERSON EATING THE HAM SANDWICH (target) through the use of another conceptual element HAM SANDWICH (vehicle) that belongs to the same frame. (There has been an upsurge in the cognitive linguistic study of metonymy in recent years; for extensive collections of papers, see Panther & Radden 1999, Barcelona 2000, Dirven & Pörings 2003, Panther & Thornburg 2003. For research concentrated on metonymy, see, among others, Brdar & Brdar-Szabó 2003, Brdar-Szabó & Brdar 2003; Ruiz de Mendoza Ibanez 2000).

As we mentioned previously, our knowledge of the world comes in the form of structured frames, schemas, or ICMs These can be construed as wholes with parts. Since frames are conceptualized as wholes that have parts, there are two general configurations of wholes and parts that give rise to metonymy-producing relationships: the "whole and its parts" configuration and the "part and part" configuration. A variety of specific metonymy-producing relationships can be observed within both configurations (for details, see Kövecses & Radden 1998 and Radden & Kövecses 1999).

We can think of categories themselves as having a part-whole structure. One example of this is the CATEGORY-AND-PROPERTY ICM. In the case of categories, the most important part is the properties used to define the category. The category as a whole has properties as parts. In the sentence

Boys will be boys

the first "boys" indicates the category of boys as a whole, while the second indicates the typical qualities, or features, of boys, such as 'being unruly' (ie we have the metonymy CATEGORY FOR PROPERTY). That is to say, a quality, or property, of boys ('being unruly') is made reference to by the second use of "boys" that captures the category as a whole. Incidentally, this analysis shows that sentences like *Boys will be boys* do not represent empty tautologies, as would be the case in many other approaches to meaning.

The reverse can also occur in the case of the category-and-property frame. A property can stand for the entire category. Consider a sentence like

African-Americans were once called blacks.

Here we have the metonymy PROPERTY FOR THE CATEGORY. As a matter of fact, the metonymy applies twice in the sentence—both *African-American* and *blacks* are instances of it. Euphemisms (as well as dysphemisms) are often based on this specific type of metonymy. As the example shows, the conceptual structure of the euphemism is the same in both cases (ie PROPERTY FOR THE CATEGORY). What changes are the connotations that go together with the particular property that replaces the old one (*African-American* does not, as yet, have the negative connotations of *black*).

Another kind of metonymy involves a category and a member of the category. This works within the CATEGORY-AND-MEMBER ICM. The category itself is viewed as a whole, while the members are the parts. The relationship between the whole category and a member is often reversible, as can be seen in the examples to follow:

She's on the pill. (CATEGORY FOR A MEMBER)
Do you have an aspirin? (A MEMBER FOR THE CATEGORY)

In the first sentence, the whole category of pills stands for a particular member of the category, namely, contraceptive pills, whereas in the second sentence a particular member of a category (ie aspirin) stands for the entire category of pain-relievers.

Metaphoric thought

Beginning with Lakoff & Johnson's (1980) seminal book, *Metaphors We Live By,* cognitive linguistics opened up a new front in the study of language and the mind. This is perhaps the best known chapter in the history of cognitive linguistics (for an overview, see Kövecses 2002). In essence, the theory maintains that metaphor is a cognitive process in which one domain of experience (A) is understood in terms of another domain of experience (B). Metaphor consists of a source (B) and target domain (A) such that the source is a more physical and the target a more abstract kind of domain. Examples of source and target domains include the following: Source domains: WARMTH, BUILDING, WAR, JOURNEY; target domains: AFFECTION, THEORY, ARGUMENT, LIFE. Thus we get conceptual metaphors: AFFECTION IS WARMTH; THEORIES ARE BUILDINGS; ARGUMENT IS WAR, LIFE IS A JOURNEY. What this means is that the concepts of AFFECTION, THEORY, ARGUMENT, and LIFE are comprehended via the concepts of WARMTH, BUILDING, WAR, and JOURNEY, respectively.

Why do particular target concepts go together with particular source concepts? The traditional answer to this question is that there is some kind of similarity between the two concepts; that is, concept a is similar to concept b in some respect. While cognitive linguists accept this kind of motivation for certain metaphors, they also take into account another kind of motivation for many other metaphors. The choice of a particular source to go with a particular target can also be motivated by some embodied experience.

Consider as an example the metaphor AFFECTION IS WARMTH. We can suggest that we find this metaphor natural because the feeling of affection correlates with bodily warmth. We experience such embodied correlation very early on in life. To be hugged and to be close to our first caretaker produces this kind of warmth that gives us comfort and eventually the feeling of affection. This example shows that the correlation between the experience of affection and that of warmth need not be conscious. As a matter of fact, it is characteristic of such embodied experiences that they are not conscious most of the time. We experience such correlations in bodily experience preconceptually and prelinguistically.

As another example, consider heat. Heat and warmth are of course related, in that they are both descriptions of temperature, but as far as bodily motivation for metaphor is concerned, they are quite different. That is to say, they motivate very different conceptual metaphors. Imagine the following situation. You are working hard, let us say sawing or chopping wood, or you are doing some vigorous exercise, like running or aerobics. After a while you're beginning to work up heat, you will feel hot, and maybe begin to sweat. We can say that the vigorous bodily activity produces an increase in body heat. Typically, when you engage in vigorous bodily activity, your body will respond in this way. Similarly, when you are very angry, or when you have strong sexual feelings, or when you are under strong psychological pressure, your body may also produce an increase in body heat that manifests itself physiologically in a variety of ways. In all of these cases, the increase in the intensity of an activity or state goes together with an increase in body heat, and your body responds this way automatically. The correlation between the increase in the intensity of the activity or the state, on the one hand, and the production of body heat, on the other, is inevitable for the kinds of bodies that we have. We can't help undergoing the correlation between intensity (of these activities and states) and body heat. This correlation forms the basis of a linguistic and conceptual metaphor: INTENSITY IS HEAT. But the correlation is at the level of the body, and it is in this sense that metaphor is just as much in the body as it is in language or thought.

Since INTENSITY is an aspect of many concepts, the source domain of heat will apply to many concepts, such as ANGER, LOVE, LUST, WORK, ARGUMENT, etc. In general, we suggest that many conceptual metaphors (ie source and target pairings) are motivated by such bodily correlations in experience.

As was mentioned, in the traditional view of metaphor similarity is the main motivation for bringing together two concepts in a metaphorical relationship. One frequently mentioned example in the literature to justify the view that metaphors are based on similarity is: "Achilles was a lion." It is proposed that Achilles and lions share a property, namely, that of being brave. This similarity gives rise to the metaphor.

Let us look at some other examples where the basis of metaphor can be claimed to be some kind of similarity. Take a passage from the *San Francisco Chronicle* analyzed by Kövecses (2010):

> Last fall, in a radio interview with a San Diego radio station and later on CNN's "Larry King Live," [singer Harry] Belafonte likened Secretary of State Colin Powell to a plantation hand who moves into the master's house, in this case the White House, and only supports policies that will please his master, President Bush.

In the example, one of the things that Belafonte knows about Powell is that Powell is an African-American. Since slaves were also African-Americans, it is easy for Belafonte to set up the metaphor, or more exactly, metaphorical analogy. We can assume that this feature shared by Powell and the slaves helps trigger the particular analogy. In other words, a feature (being an African-American) that is shared by an element of the target (in this case, Powell) and an element of the source (the slaves) help the speaker arrive at an extensive set of analogical relationships between source and target.

But in many other cases the shared element is not such an obvious feature. Often, the target and the source are characterized by similar structural relations — without any shared features of the communicative situation that might trigger the recognition of the shared relations (such as in the case above) (see, eg Gentner 1983, Holyoak & Thagard 1996, Glucksberg & Keysar 1993). For example, we can find shared generic-level structure in such domains as HUMAN LIFETIME and the LIFE-CYCLE OF PLANTS. This structure would include, for instance, something like: "living organisms have a period of their existence when they are most active" (whatever this means either for people or for plants) and "living organisms decline after

this period." This case is of course a highly conventional metaphor: THE HUMAN LIFETIME IS THE LIFE-CYCLE OF A PLANT. But the same kind of analogy accounts for any number of similar metaphors. Take, for instance, the metaphor used by Harry Belafonte. We would not need any explicit triggers to say of an especially servile secretary of state or minister that he or she is a slave, thus evoking the GOVERNMENT IS A PLANTATION metaphor in which the president or prime minister is the master and the secretaries of state or ministers are the slaves. This is because we have the ability to recognize shared generic-level structure such as "inferiors are servile to superiors in order to please them" in distinct domains.

In summary, we can think of embodiment and similarity as different kinds of constraint on the creation of metaphor. Embodiment seems to be a stronger kind of constraint, in that it works automatically and unconsciously.

The idea that metaphors can be motivated by correlations in bodily experience has given rise to a "neural theory of metaphor." It is the brain that runs the body, and if metaphor is in the body it must also be in the brain. Embodied experience results in certain neural connections between areas of the brain (these areas corresponding to source and target). For example, it may be suggested that when the area of the brain corresponding to affection is activated, the area corresponding to warmth is also activated. The assumption in recent neuroscientific studies (see, for example, Gallese & Lakoff 2005) is that when we understand abstract concepts metaphorically, two groups of neurons in the brain are activated at the same time; when one group of neurons fires (the source), another group of neurons fires as well (the target). We can then assume that, for example, neurons corresponding to intensity and heat, respectively, are activated together in the brain when we think about the abstract concept of intensity in connection with certain events, activities, and states. Similarly, when we think about abstract amounts, such as prices, the neurons corresponding to amount and those corresponding to verticality (up-down) are co-activated in the brain. These co-activations of groups of neurons yield what are known as primary conceptual metaphors INTENSITY IS HEAT and MORE IS UP (LESS IS DOWN). (On "primary metaphors," see Grady 1997.)

In which parts of the brain are the two domains located? According to this paradigm of research, the source domain is located in the sensory-motor system, whereas the target domain is found in higher cortical areas. This idea is the neuroscience version of the notion of the embodiment of metaphor, which states that source domains typically come from more concrete and physical sensory-motor experience, while target domains are less physical in nature.

Image-schematic understanding

Much of our knowledge is not propositional but image-schematic. Johnson defines image schemas in the following way: An image schema is "a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence to our experience" (Johnson 1987: xix). Image schemas function as the foundation of thought. To demonstrate what image schemas are, how they emerge, and how they perform their function in structuring thought, let us consider some examples.

First, let's take the CONTAINER image schema (Lakoff 1987). The bodily experiences that motivate the existence of this schema are varied, but they can be reduced to two general types of experience. On the one hand, we have bodies that are containers (of body organs, fluids, etc). On the other hand, not only are our bodies containers, but we function as container-objects in other larger objects. Thus, these larger objects, like buildings, rooms, contain us. The CONTAINER image schema has the following structural elements: INTERIOR, BOUNDARY, and EXTERIOR. The basic logic of the schema can be given as follows: Everything is either inside the container or outside it. Moreover, if B is in A, and C is in B, then one can conclude that C is in A. Thus the CONATINER schema imposes a certain logic on us. There are many metaphors that are based on the CONTAINER schema. For example, STATES ARE CONTAINERS, PERSONAL RELATIONSHIPS ARE CONTAINERS, and THE VISUAL FIELD IS A CONTAINER. This is why we can be *in* trouble, we are *in* love, and things come *into* view.

Second, let us look at the SOURCE-PATH-GOAL schema (Lakoff 1987). The bodily experience that motivates the schema is the most common (and unconscious) type of experience: Whenever we move, we move *from* a place *to* another place *along* a sequence of continuous locations. The structural elements include SOURCE, PATH, GOAL (DESTINATION), and DIRECTION. The basic logic is hardly noticeable: If you go from A to B, then you must pass through each intermediate point connecting A and B. Again, several metaphors are based on this image schema. Take the complex metaphor of LIFE IS A JOURNEY, which assumes the SOURCE-PATH-GOAL SCHEMA. A mapping (and a submetaphor) of this complex metaphor is PURPOSES ARE DESTINATIONS, in which we also have a SOURCE, a PATH, and a GOAL. As a matter of fact, it is this second primary metaphor that provides some of the motivation for the more complex one. Complex events are also commonly viewed as involving an initial state — SOURCE, intermediate stages — PATHS, and a final state — GOAL.

Third, consider now the image schema of force, as studied extensively by Talmy (1988, 2000). A large portion of our utterances about the world

can be accounted for by making reference to such notions as agonist, antagonist, force tendency of agonist, etc. Kövecses (2000) applies this conceptual machinery to the study of the folk theory of the mind; in particular to such components of the mind as emotion, morality, and rational thought. Based on the study of the language we use to talk about the mind, he suggests that all three components can be described in force dynamic terms. In other words, the workings of the mind can be seen as interactions of forces. The rational "self–agonist" undergoes change in emotion, the rational "self–agonist" withstands change in morality, and the rational "self–antagonist" causes change in thought. What is of any interest in such a description? After all, everyone knows that emotion is different from morality and that rational thought is different from both. But this is not the point. What is remarkable about the analysis in terms of force dynamics is that it shows that the basic cognitive "architecture" of emotion, morality, and rational thought is so much alike. They are all constituted force dynamically, and this shows that "superficially" very different domains, or faculties, of the folk theory of the mind have a deep underlying similarity on which the many obvious differences are based.

It is an interesting feature of thought that we can conceptualize domains and situations by means of not just one but several image schemas. For example, force dynamic image schemas can interact with perceptual image schemas: We can have a FORCE inside a CONTAINER. Forces inside containers are fairly common as metaphorical ways of conceptualizing the mind. It was shown by Kövecses (1990) that this was a major metaphor used by Sigmund Freud in his psychoanalytic theory.

Figure-ground alignment in grammar

Figure-ground relations have been studied mostly by cognitive psychologists. What is called "figure-ground alignment" here is important if we want to account for how we talk about spatial relations in language. Language about spatial relations is pervasive in communication. We talk about how one entity is positioned with respect to another entity, how an entity moves in relation to another entity, and so on. For example, when we say that "The bus is coming," we have a figure, the bus, that is presented by the sentence as moving in relation to the ground, the speaker. The cognitive linguist who studied this area of the interface between language and cognition extensively was Talmy (2000).

To begin, we should first note that figure-ground alignment is an asymmetrical relation. Let us assume that we have *bike* as figure and *house* as ground in the sentences below. Whereas one can naturally say

The bike is near the house,

it is much less natural to say

??The house is near the bike.

This is because the figure should come first in the sentence, followed by the ground. The reversal of figure-ground alignment in the second sentence makes the sentence sound odd.

The same applies to the following pair of sentences:

The fly is on the ceiling. (figure-ground)
*The ceiling is above the fly. (ground-ceiling)

Why are the *bike* and the *fly* the figure and the *house* and the *ceiling* the ground? Talmy (2000 : 315–316) characterizes figure and ground in the following way:

Figure	*Ground*
smaller	larger
more mobile	more stationary
structurally simpler	structurally more complex
more salient	more backgrounded
more recently in awareness	earlier on scene/in memory
location less known	location more known

These characteristics do not all have to be present in particular cases and we often decide on what the figure and ground will be on the basis of just one or two situationally important features. In the examples above, it is clear that the bike and the flea are smaller and more mobile than the house and the ceiling, respectively. This makes them good figures in the given context. In other contexts, however, they may become grounds.

The two examples we have seen so far involve static relations between two entities (bike-near-house and flea-on-ceiling). However, as our characterization of spatial relations above suggests, spatial relations also involve motion events, in which one entity moves in relation to another. This is exemplified by the sentence:

She went into the house.

In this case, we have a motion event, where *she* is the figure and *house* is the ground. The figure (*she*) moves in relation to the ground (*house*).

In addition to its application to static and dynamic spatial relations, figure-ground alignment can be seen at work in grammatical structure as well. Complex sentences can be construed in terms of figure-ground alignment; the main clause corresponds to the figure, while the subordinate clause to the ground. Let us take the following sentences from Croft & Cruse (2004 : 57):

I read while she sewed.
I read and she sewed.

The main clause *I read* is the figure and the subordinate clause *while she sewed* is the ground. The relation between the two events is construed asymmetrically in the first sentence, but symmetrically in the second. This means that the reading event is viewed as occurring against the background of the sewing event. However, given the second sentence, no such relation is construed between the two events, which are seen as occurring independently of each other. This latter construal results in a coordinated syntactic construction (the two clauses connected by *and*).

In other cases, the two events can only be construed as an asymmetrical figure-ground relation. Since dreaming is contingent on sleeping but sleeping is not contingent on dreaming (Talmy 2000 : 325), we can have

He dreamed while he slept.

but not

*He slept while he dreamed.

Moreover, the two events cannot be conceived as being coextensive and coordinated, either. Thus the sentence

*/?He dreamed and he slept

sounds odd. This is because the two events are inherently causally related (dreaming being contingent on sleeping), and thus a noncausal conceptualization (ie as symmetrical figure and ground) is not possible in a natural way.

Scope of attention

The focus of attention is surrounded by the periphery of attention, or consciousness. This peripheral area of attention is called the scope of attention. The focus and scope of attention have consequences for the grammaticality of sentences. For example, we conceive of knuckles as being parts of the finger, fingers as parts of the hand, the hand as part of the arm, and the arm as part of the body. Thus it makes sense to say that the domain within which an entity becomes accessible to attention has an entity (Langacker 1987 : 119):

A finger has three knuckles and a fingernail.

But it is not really acceptable to say that

???A body has twenty eight knuckles.

The reason is that the concept of KNUCKLE has as its immediate scope the FINGERS or the HANDS, but the BODY is not within this immediate scope. In other words, this kind of statement is only possible when the immediate scope—but not when the more distant scope—is involved.

Scalar adjustment

The notion of scalar adjustment has to do with how closely we attend to the details of the scene. This aspect of construal was studied extensively by Talmy (eg 1983).

We can have a coarse-grained or a fine-grained view of the same situation, as can be seen in the sentences below (Talmy 1983):

She ran *across* the field.
She ran *through* the field.

The first sentence looks at the situation "from a distance," so to speak. No details of the scene are suggested in any way. However, the second sentence indicates through the word *through* a more fine-grained view; it lets us imagine the field as having grass, weeds, bushes, etc through which the person runs.

The same idea can be exemplified with other sentences, taken from Croft & Cruse (2004 : 52):

We drove *along* the road.
A squirrel ran *across* the road.
The construction workers dug *through* the road.

As far as the degree of detail in construal is concerned, the basic difference among the three sentences is that they represent different degrees of attention to detail. In the first sentence, the road is merely a line, a one-dimensional object; in the second, it is a two-dimensional one; and in the third, it is three-dimensional.

Scalar adjustment is not limited to visual experience only. We can construe other types of experience with lower or greater degree of detail. When we say that "John's being silly," the construal is more fine-grained than when we say that "John's silly." John's silliness is temporary in the former case with clear temporal boundaries, while it is permanent in the latter and it is taken to be a personality trait in the latter.

Dynamic and static attention

Our attention can scan a scene dynamically or statically. We can either move our attention across a scene or construe it as something static. This difference in construal has been applied to the state-process distinction by Talmy and to the predication-nonpredication distinction by Langacker.

Take the following sentence by Talmy (2000):

The road *winds through* the valley and then *climbs over* the high mountains.

What we find here (indicated by italics) is what Talmy calls "fictive motion," that is, motion that does not really take place. When we use this sentence, we talk about observing a static scene. After all, the road does not move. However, we view this static scene dynamically, as if the road were moving.

Consider now Langacker's (1987) examples:

The Boston Bridge collapsed.
The collapse of the Boston Bridge.

In the first sentence, the word collapse is used in a predicative function; we say what happened to the Boston Bridge. That is to say, we have a dynamic scene viewed dynamically. Langacker calls this "sequential scan-

ning." The scene is dynamic because we can observe something happen through time.

By contrast, the second phrase construes the situation differently. It suggests what Langacker calls "summary scanning." This is viewing the situation as a single static frame that somehow "summarizes" a whole series of events — not in terms of a process unfolding through time. The collapse of the bridge is an event, an essentially dynamic situation, but we choose to present it in a static way by making use of summary scanning.

Typically, dynamic situations are construed by means of sequential scanning and are expressed by means of verb phrases in sentences. The verb phrases are used predicatively. However, we can construe essentially dynamic situations by means of summary scanning and we can express them by means of noun phrases that we do not use predicatively. This is what happens in the case of *the collapse of the Boston Bridge.* But of course we can predicate something of such noun phrases; for example, we can say: *The collapse of the Boston Bridge was quick.*

In general, the two kinds of scanning a situation (summary vs sequential scanning) are used by Langacker to distinguish *things* and *relations* — the highest level conceptual units. Things are expressed as nouns and adjectives, while relations are expressed as verbs, prepositions, and conjunctions.

Mental spaces

The theory of mental spaces is a key idea in cognitive linguistic approaches to the understanding of how people make sense of utterances in the course of online communication. To get an idea of what mental spaces are, consider as an example the so-called "picture noun" context, as made explicit by the second sentence below (Fauconnier 1997):

> The girl with blue eyes has green eyes.
> In the picture, the girl with blue eyes has green eyes.

There are two mental spaces here: the mental space of reality, as we represent it to ourselves and the mental space of the picture, as we perceive it. The mental space of reality is the base space and the mental space of the picture is a "model" space (or picture space). To understand the sentence, the mappings go from the base space to the picture space. If we represent the girl as *x,* the eyes as *y,* and the blue color of the eyes as *z,* the mappings are as follows:

Base Picture
girl (x) → girl (x′)
eyes (y) → eyes (y′)

However, the blue color (z) of *x*'s eyes does not correspond to the green color of *x*′'s eyes. In other words,

blue (z) ↛ green (z′)

This says that the blue color of the girl's eyes in the base space does not correspond to the green color of the girl's eyes in the picture space. But it is precisely what the sentence states: that the girl who has blue eyes has green eyes in the picture. Thus we get a contradiction. How can we explain it by means of mental space theory?

We can account for the apparent contradiction if we assume that there are two mental spaces here: a base space and a picture space. In the base space, we have the girl with blue eyes, and in the picture space we have the girl with green eyes. The girl with blue eyes in the base space can be said to have green eyes in the picture space because we can refer to a counterpart of an element by means of the description of that element in another space (ie in the base space where the description is *the girl with blue eyes*) (Fauconnier 1997). This provides an elegant solution to a problem that would be difficult to handle for formal theories of language.

Conceptual integration: the creativity of thought

To see what conceptual integration, or blending, involves, we can take an example from a well known metaphor ANGER IS A HOT FLUID IN A CONTAINER (see Kövecses 1986, 1990, Lakoff & Kövecses 1987, Lakoff 1987). This metaphor is constituted by the mappings "container → body," "hot fluid → anger," "degrees of heat → degrees of intensity," etc. However, there is more going on than just having straightforward mappings from source to target in one of the examples of this metaphor:

God, he was so mad I could see the smoke coming out of his ears.

The example was reanalyzed by Fauconnier & Turner (2002), who point out that in this case an element of the source is blended with an element of the target. There are no ears in the source and there is no smoke in the target, but in the blend both are present at the same time as *smoke*

coming out of his ears. A frame is created with smoke and ears in it that is novel with respect to both the source frame and the target frame.

What happens here is that an angry person's head with the ears becomes the container in the source, and the smoke (steam) in the source will be seen as coming out of the ears (and not through the orifices of the container). This is a true conceptual fusion of certain elements of both source and target in the blend. It is called a double-scope network. The blend goes beyond simply instantiating existing frame roles in the source with participants in the target frame, as is often the case with single-scope integration networks (Fauconnier & Turner 2002).

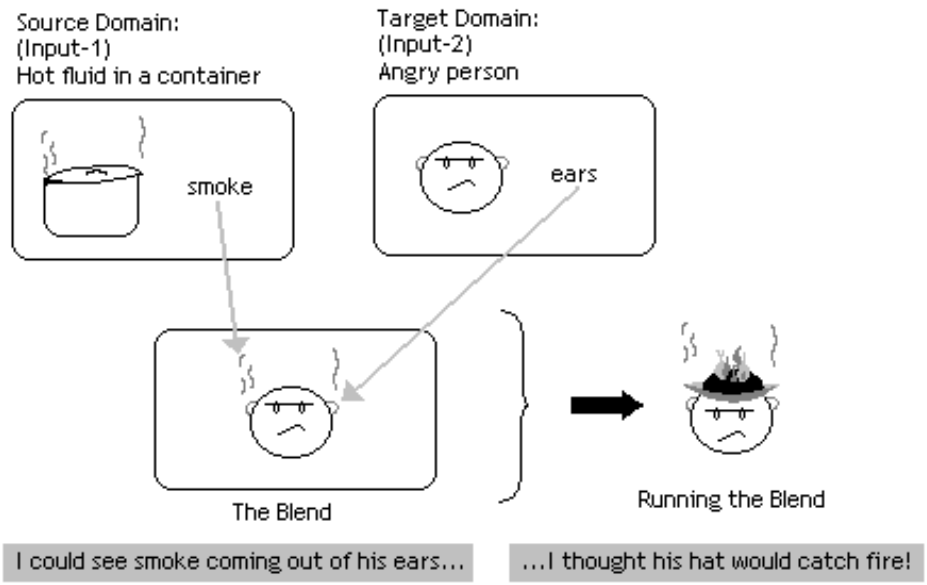
Given the new emergent structure, the blend can be developed further. One can say, for example:

> God, was he ever mad. I could see the smoke coming out of his ears—I thought his hat would catch fire!

To understand this sentence, we need the "smoke coming out of one's ears" frame, plus knowledge based on how intensity is conceptualized in the network (see Kövecses 2010). A submapping of the ANGER IS HEAT metaphor is INTENSITY OF EMOTION IS DEGREE OF HEAT. One of the entailments of this metaphor is that a high degree of heat may cause fire (corresponding to "intense anger may cause a dangerous social situation"). But how does "hat" get into the blend? The fact that it does shows the almost infinite creativity of blends: we can develop them further and further, bringing about new conceptualizations that depend on old ones, as well as the application of systematic cognitive processes. In this particular case, the "hat" emerges as we run the previous blend with the "smoke coming out of one's ears." The head-container with the ears metonymically evokes the hat, which is typically worn on the head. Due to the entailment of the INTENSITY IS HEAT metaphor ("high degree of heat may cause fire"), the hat can be seen as catching fire. This would indicate an overall increase in the intensity in the person's anger. We can represent all this diagrammatically as below.

Although this example may sound like a highly creative blend, Fauconnier & Turner (2002) emphasize that blending just as commonly involves conventionalized cases and can go into the heart of grammar (to use a theory-dependent metaphor).

As another example of conceptual integration, let us now take what is known as the "caused motion" construction, analyzed in detail by Goldberg (1995) in a cognitive linguistic framework. A general characterization



of the caused motion construction can be given along the following lines. Semantically, the construction can be described in the following way: An agent does something, and as a result an object moves. As a prototypical example of this situation, we can take the sentence

Jack threw the ball over the fence.

In the sentence, Jack is the agent that throws the ball (does something), and the action causes (produces a result) the ball to move over the fence (the object moves).

The form of the sentence can be given as NP-V-NP-PP, where *Jack* is the first NP, *throw* is the V, *the ball* is the second NP, and *over the fence* is the PP (prepositional phrase).

It is clear that in the prototypical case the verb must be a transitive verb, such as *throw, kick, toss, push, fling, flip,* and many others. This is the characterization of the prototype of the construction. But there are many other cases, including:

She sneezed the napkin off the table.
I walked him to the door.
I'll talk you through the procedure.
They teased him out of his senses.

I read him to sleep.
They let Bill into the room.
We ordered them out of the house.

The major difference between these examples and the prototype of the construction is that the latter verbs are either not transitive (*sneeze, talk*) or they are not verbs that describe actions as a result of which objects are moved (*sneeze, talk, walk, tease, read, let, order*).

Thus, we have the following problem: Which verbs can be used in this construction, and which ones cannot? Fauconnier (1997) proposes that it is best to analyze the construction as a blend. On this view, the blend emerges from two input spaces:

1. The basic construction that is found in many languages:

NP	V	NP	PP
a	d	b	c
John	threw	ball	to me

2. A "causal sequence"
[[a′ ACTS] CAUSES [b′ MOVE to c′]]

There is a straightforward set of cross-space mappings between the two input spaces that can be given as follows:

Mappings between input1 and input2:
$a \rightarrow a'$
$b \rightarrow b'$
$c \rightarrow c'$

In the basic, that is, prototypical, construction, the verb has all three elements in one: ACTS, CAUSES, MOVE. For example, throwing involves a particular kind of action (ACTS), the moving of an object (MOVES), and the causal link between the throwing action and the moving of the object (CAUSES). For this reason, d (eg throw) in the first input space may map to any one of these elements in the second input, which is represented as a set of mappings below:

$d \rightarrow$ ACTS
$d \rightarrow$ MOVES
$d \rightarrow$ CAUSES

Thus we get three different blends: d with ACT, d with MOVES, or d with CAUSE. Fauconnier (1997 : 172–175) illustrates these blends with the following examples:

d → ACTS: The sergeant waved the tanks into the compound.
d → MOVE: Junior sped the car around the Christmas tree.
d → CAUSES: The sergeant let the tanks into the compound.

The three different blends inherit the syntactic structure of input1. This means that we have the same syntactic pattern in all three cases: NP V NP PP. However, their conceptual structure derives from input2, in which a′ does something that causes b′ to move to c′. As we saw, in the prototypical case the doing, the cause, and the moving are all present in one verb (such as *throw*), but in many nonprototypical cases (such as *wave, speed, let*) the complex d verb maps to and forms a blend with only a single element.

Although there is no syntactic innovation in this particular blended construction (the blend inherits the syntactic structure of input1), there can be semantic innovation. Verbs that can be mapped to either ACT, MOVE, or CAUSE can appear in the construction. Fauconnier (1997 : 176) mentions some innovative examples in the construction:

The psychic will think your husband into another galaxy.
They prayed the boys home.

They verbs *think* and *pray* map to the ACT element, but leave the CAUSE and MOTION elements unspecified. Which particular verbs can be used in the construction in novel ways is an open question. A factor that may play a role is the issue of which actions are situationally interpretable as causing the motion in question. For example, in the case of *pray* (describing missing boys in a news item) the action of praying is situationally interpretable as an immediate cause of the motion.

Cognitive grammar

The cognitive processes that we seen above can be found in what we call grammar. Grammar is a complex cognitive system that organizes and imbues with meaning the way we communicate with each other. It will be claimed that what are called "constructions" are a major part of this. Furthermore, it will be suggested that the theory of constructions in grammar goes against the still dominant view of grammar—generative grammar.

Much of the work to be described below goes back to the foundational work of Langacker (1987, 1991a, 1991b) and Lakoff (1987). A large number of scholars have taken inspiration from the body of work they have produced and have applied it to a variety of issues in the grammatical description of human languages.

A sketch of cognitive grammar

Let us now turn to the theory of cognitive grammar and see what it actually consists of and how it operates. The description of cognitive grammar that follows is taken from Kövecses (2006). The definitive work on cognitive grammar is Langacker's two-volume book (1987, 1991a). In this section, I try to provide a sketchy outline of cognitive grammar as a coherent system of explanation of the phenomenon of language structure, making use of Langacker's work and that of others.

Let us begin with the notion of the "linguistic sign." Since the beginnings of modern linguistics (see Saussure 1916), linguistic signs have been defined as pairings of form and meaning. By form is meant the phonological shape/form (sound shape/sequence) of a word, and meaning is the conceptual content that is associated with that particular sound shape or sequence of sounds. An example that is perhaps most commonly given to demonstrate this kind of pairing of form and meaning is the word *tree* (an example introduced by Saussure himself).

The word *tree* has a sound shape /tri:/ and a conceptual content that we designate as tree. The latter can be equated with the concept corresponding to tree. The major claim about the relationship between sound shape and meaning in most of modern linguistics is that it is an arbitrary relationship. Its arbitrariness is demonstrated by the fact that in different languages different sound shapes correspond to essentially same meaning. In English the sound shape is /tri:/, in Hungarian it is /fa/, in German it is /baum/, and so on. In other words, sound shapes do not resemble the meanings associated with them; the relationship between the two is entirely arbitrary.

However, cognitive grammarians think about this issue in a significantly different way. For one thing, cognitive linguists suggest that linguistic signs include not just words but other units of language as well. They suggest that the category of linguistic signs includes much more than just words; specifically, there are two types of extension from words that make the category much more inclusive (Taylor 2003). It is this broader conception of linguistic signs that cognitive linguists call "symbolic units" (Langacker 1987).

On the one hand, linguistic signs are extended "horizontally," including a diverse range of linguistic units, such as bound morphemes (like *-ed, -s, -ing*), fixed expressions like *how do you do?, how are you?, good morning!,* and idioms of all kinds like *add fuel to the fire, digging your own grave,* and *spill the beans* (Taylor 2003).

The significant issue that this more inclusive view of the linguistic sign raises is whether the relationship between form and meaning is indeed arbitrary. It can be claimed that, for example, in the case of bounded morphemes when we add them to particular word stems that have a meaning (eg *walk* + *ed*), we actually add more meaning to the word. For instance, if we add *-ed* to *walk,* then the word form *walked* will have more meaning than *walk* by itself; it will include the meaning that the action of walking took place before the time of speaking. If we add the third person verbal *-s* to *walk,* the new form *walks* will have more meaning than *walk* by itself; it will indicate the third person simple present tense. Since when we speak, we add these various morphemes to word stems, it can be suggested that the arbitrariness of the linguistic sign is a rather narrow view of the actual situation. It is true that the sound shapes of word stems in isolation have nothing to do with their meanings, but it is also true that when we actually use language for communication, we constantly add morphemes of various kinds to the word stems — a process resulting in adding meaning to the meaning of the words in isolation. It follows from this that we can observe an iconic relationship between word forms and meanings in a huge number of cases: As we add more form to words, we create more meaning. This is what is called iconicity.

In sum, the thesis of the arbitrariness of the linguistics sign in earlier approaches to language is a very partial truth. In the majority of cases of actual language use, the relationship between the word form and the meaning is highly motivated — not arbitrary.

The category of linguistic sign is also seen as being extended "vertically" in cognitive linguistics (Taylor 2003). This means that words are viewed as instances of word classes such as N(oun), V(erb), Adj(ective), and so on, and the combinations of words are seen as instances of more general syntactic categories and phrases, such as DET(erminer) + N = NP (noun phrase), ADJ N = NP, and NP + V + NP + NP = the ditransitive construction, and so on. Such categories as N, V, NP, and NP + V + NP + NP are regarded as being devoid of any meaning in most modern approaches to grammar. They are taken to be meaningless abstract symbols defined by structural properties. But, according to cognitive linguists, like Langacker, Lakoff, Goldberg, Taylor, and others, even such categories as noun, verb, and the ditransitive construction have meaning. On the cognitive linguis-

tic view, nouns are "things" and verbs are "processes." But it could asked: Does the ditransitive construction made up of symbols like NP VP NP NP have any meaning of its own? Consider some typical examples of the ditransitive construction, where the transfer of an entity is physical:

She threw me the ball.
She tossed me a drink.

It is precisely this meaning that these sentences share. Less prototypical cases have a similar meaning:

I taught him Russian.
I baked her a cake.
I faxed her a letter.

All of the sentences have the structure NP + V + NP + NP, which has the general meaning: 'the transfer of an entity to another participant.' This suggests the conclusion that linguistic units such as noun, verb, the ditransitive construction, and so forth are not meaningless abstract symbols, as most modern approaches have it. On the contrary, these abstract categories appear to have meaning—no matter how schematic this meaning is.

Another conclusion that we can draw from this is that there is much less arbitrariness in linguistic units than previously thought. There seems to be iconicity in the ditransitive construction as well. For example, when we compare the meaning of *I taught Harry Greek* with the prepositional phrase version of the sentence, *I taught Greek to Harry,* we find that the more "compact" ditransitive construction reflects a construal of the situation in which the agent entity has exerted more influence on the patient entity than in the case of the construal described by the prepositional phrase construction. By contrast, the construction with the prepositional phrase indicates less influence on the patient; thus, in this sense, this construction bears meaning as well.

As a final observation based on the examples above, we may note that cognitive linguists consider the particular linguistic expressions as instances of more general "constructional schemas." That is to say, there is a constructional schema, such as N, V, NP, that underlies the expressions we use; the expressions are said to be "sanctioned" by the schemas. This means that we can use the particular expressions because we have the underlying constructional schemas that sanction them. The expressions we use are instantiations of higher-level schemas. This view of how language works leads to what is known as "construction grammar"—designating a

more specific version of grammar within the broader category of cognitive grammar.

In a construction grammar, each linguistic expression is an instance of a higher-level constructional schema that sanctions the use of the expression. Cognitive grammar is essentially a construction grammar in this sense, where constructions are form-and-meaning pairs.

Conclusions

In this brief introduction to cognitive linguistics, two general issues were examined. First, what cognitive processes play a role in making sense of the world around us? Second, how do these cognitive processes contribute to our understanding of issues in language?

To begin, we have found that we make use of a relatively small number of cognitive processes in making sense of our experience. We categorize the world, organize our knowledge into frames, we make use of within-frame mappings (metonymy) and cross-frame mappings (metaphor), build image schemas from bodily experience and apply these to what we experience, divide our experience into figures and grounds, set up mental spaces and further mappings between them in the on-line process of understanding, and have the ability to skillfully and creatively integrate conceptual materials from the mental spaces that we set up. We do not do most of this in a conscious way; our cognitive system operates unconsciously most of the time. It is these and some additional cognitive processes not discussed in this paper that participate in our unconscious meaning-making activity.

With the help of these cognitive processes we can account for many (or perhaps most) of the phenomena of meaning in language in a coherent fashion. The theory that emerges from the application of these cognitive processes to our understanding of meaning in language will be very different from other theories of language. Most importantly, the theory will be a theory of meaning, and not one of form. On this view, even highly abstract and schematic forms (such as N, V, NP V NP, or NP V NP PP) are seen as having meaning; as a matter of fact, the only justification of the existence of such abstract and schematic forms is their role in the expression and understanding of meaning as being part of "symbolic units," which consist of combinations of meaning and form (Langacker 1987). On the cognitive linguistic view, the scientific study of language cannot be the study of the manipulation of such abstract and schematic forms (ie syntax); the only legitimate and scientific goal in the study of language is the study of *meaning* in language (including the meaning of abstract symbolic units) and how the cognitive processes discussed above play a role in this.

REFERENCES

Andor, József. 1985. On the psychological relevance of frames. *Quaderni di Semantica* 6(2): 212–221.

Barcelona, Antonio (ed.). 2000. *Metaphor and Metonymy at the Crossroads.* Berlin: Mouton de Gruyter.

Brdar, Mario and Rita Brdar-Szabó. 2003. Metonymic coding of linguistic action in English, Croatian and Hungarian. In: Panther & Thornburg 2003 : 241–246.

Brdar-Szabó, Rita and Mario Brdar. 2003. The manner for activity metonymy across domains and languages. *Jezikoslovlje* 4(1): 43–69.

Croft, William and Alan Cruse. 2004. *Cognitive Linguistics.* Cambridge: Cambridge University Press.

Dirven, René and Ralph Pörings (eds.). 2003. *Metaphor and Metonymy in Comparison and Contrast.* Berlin: Mouton de Gruyter.

Fauconnier, Gilles. 1997. *Mappings in Language and Thought.* Cambridge and New York: Cambridge University Press.

Fauconnier, Gilles and Mark Turner. 2002. *The Way We Think.* New York: Basic Books.

Fillmore, Charles. 1975. An alternative to checklist theories of meaning. In: C. Cogen, H. Thompson, G. Thurgood, K. Whistler, and J. Wright (eds.), *Proceedings of the First Annual Meeting of the Berkeley Linguistic Society*. Berkeley, CA. 123–131.

Fillmore, Charles. 1982. Frame semantics. In: *Linguistics in the Morning Calm.* The Linguistic Society of Korea. Hanshin. 111–137.

Gallese, Vittorio and George Lakoff. 2005. The brain's concepts: The role of the sensory-motor system in conceptual structure. *Cognitive Neuropsychology* 22(3–4): 455–479.

Gentner, Dedre. 1983. Structure-mapping: A theoretical framework for analogy. *Cognitive Science* 7 : 155–170.

Gibbs, Raymond W. 2000. Making good psychology out of blending theory. *Cognitive Linguistics* 11(3–4): 347–358.

Gibbs, Raymond W., Dinara Beitel, Michael Harrington, and Paul Sanders. 1995. Taking a stand on the meanings of *stand*: bodily experience as motivation for polysemy. *Journal of Semantics* 11 : 231–251.

Glucksberg, Sam and Boaz Keysar. 1993. How metaphors work. In: Andrew Ortony (ed.), *Metaphor and Thought.* 2nd ed. Cambridge: Cambridge University Press. 401–424.

Goldberg, Adele. 1995. *Constructions.* Chicago: The University of Chicago Press.

Grady, Joseph E. 1997. Theories are building revisited. *Cognitive Linguistics* 8 : 267–290.

Holyoak, Keith and Paul Thagard. 1996. *Mental Leaps: Analogy in Creative Thought.* Cambridge, MA: The MIT Press.

Johnson, Mark. 1987. *The Body in the Mind.* Chicago: The University of Chicago Press.

Kövecses, Zoltán. 1986. *Metaphors of Anger, Pride, and Love.* Amsterdam: John Benjamins.

Kövecses, Zoltán. 1990. *Emotion Concepts.* Berlin & New York: Springer Verlag.

Kövecses, Zoltán. 2000. *Metaphor and Emotion.* Cambridge & New York: Cambridge University Press.

Kövecses, Zoltán. 2002. *Metaphor. A Practical Introduction.* Oxford & New York: Oxford University Press.

Kövecses, Zoltán. 2005. A broad view of cognitive linguistics. *Acta Linguistica Hungarica* 52(2–3): 135–172.

Kövecses, Zoltán. 2006. *Language, Mind, and Culture. A Practical Introduction.* Oxford & New York: Oxford University Press.

Kövecses, Zoltán. 2010. *Metaphor. A Practical Introduction.* 2nd ed. Oxford University Press.

Kövecses, Zoltán and Günter Radden. 1998. Metonymy: Developing a cognitive linguistic view. *Cognitive Linguistics* 9 : 37–77.

Lakoff, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind.* Chicago: The University of Chicago Press.

Lakoff, George and Mark Johnson. 1980. *Metaphors We Live By.* Chicago: The University of Chicago Press.

Lakoff, George and Zoltán Kövecses. 1987. The cognitive model of anger inherent in American English. In: Dorothy Holland and Naomi Quinn (eds.), *Cultural Models in Language and Thought.* Cambridge & New York: Cambridge University Press. 195–221.

Langacker, Ronald. 1987. *Foundations of Cognitive Grammar. Theoretical Prerequisites. Vol. 1.* Stanford: Stanford University Press.

Langacker, Ronald. 1991a. *Foundations of Cognitive Grammar. Vol. 2. Descriptive Applications.* Stanford: Stanford University Press.

Langacker, Ronald. 1991b. *Concept, Image, and Symbol.* Berlin: Mouton de Gruyter.

Panther, Uwe-Klaus and Linda Thornburg (eds.). 2003. *Metonymy and Pragmatic Inferencing.* Amsterdam: John Benjamins.

Panther, Uwe-Klaus and Günter Radden (eds.). 1999. *Metonymy in Language and Thought.* Amsterdam: John Benjamins.

Radden, Günter and Zoltán Kövecses. 1999. Towards a theory of metonymy. In: Panther & Radden 1999 : 17–59.

Rosch, Eleanor H. 1978. Principles of categorization. In: Eleanor H. Rosch and Barbara B. Lloyd (eds.), *Cognition and Categorization.* Hillsdale, NJ: Lawrence Erlbaum. 27–48.

Ruiz de Mendoza Ibanez, Francesco. 2000. The role of mappings and domains in understanding metonymy. In: Barcelona 2000 : 109–132.

Saussure, Ferdinand de. 1916. *Cours de linguistique général.* Charles Bally and Albert Sechehaye (eds.). Lausanne & Paris: Payot.

Schank, Robert and Robert Abelson. 1977. *Scripts, Plans, Goals, and Understanding.* Hillsdale, NJ: Lawrence Erlbaum.

Talmy, Leonard. 1983. How language structures space. In: Herbert L. Pick, Jr. and Linda P. Acredolo (eds.), *Spatial orientation: Theory, research, and application.* New York: Plenum Press. 225–282.

Talmy, Leonard. 1988. Force Dynamics in Language and Cognition. *Cognitive Science* 12 : 49–100.

Talmy, Leonard. 2000. *Toward a Cognitive Semantics.* Cambridge, MA: The MIT Press.

Taylor, John. 1989. *Linguistic Categorization.* Oxford: Clarendon Press.

Taylor, John. 2003. *Cognitive Grammar.* Oxford: Oxford University Press.

Zoltán Kövecses
kovecses.zoltan@btk.elte.hu
Eötvös Loránd University
Budapest

Is it just language play? Alliteration and rhyme in novel compound formation*

Réka Benczes

1 Introduction

We all engage in word play; it is a natural ability of ours. Right from the very beginning, when children acquire their native language, they routinely play with the sounds they learn, an activity which fosters the mastering of the speech sounds. In fact, between the toddler and adolescent years children go through distinct stages of wordplay, which are directly related to proficiency in both language and literacy (Crystal 1996, Geller 1985). Later on, wordplay and—more generally—language play emerges on all sorts of levels; just as it forms an everyday part of interpersonal communication (see, eg Dienhart 1998), it is also a common feature of the media, of advertisements or of fiction. Crystal (1998 : 1) alludes to this phenomenon as the "ludic" function of language and points out that—due to the prominence of the communicative aspect of language use (ie that we use language primarily to communicate information)—this area has been mostly ignored in linguistic inquiry, even though it should "be at the heart of any thinking we do about linguistic issues."

Perhaps one of the most conspicuous examples of language play is the innovative, witty and often funny conceptualization that novel compounds such as *street spam* ('advertisements posted on telephone poles, traffic lights, and other public areas'; source: www.wordspy.com; henceforth Wordspy) or *snail mail* ('the physical delivery of mail, as by the postal

* I wish to thank Keith Allan, Kate Burridge, Zoltán Kövecses and Raymond W. Gibbs for their very helpful and constructive remarks. I am also grateful to Péter Szigetvári for the meticulous editing.

service, considered as slow in comparison to electronic mail; a letter, etc, sent by post')[1] exemplify. Such compounds are based on conceptual metaphors and metonymies and their humour lies in the unconventional application of these cognitive mechanisms. Interestingly, these compounds are also often motivated by some sort of phonological analogy (which is understood here as structural similarity to phonological form), such as alliteration (as in the case of *street spam*) or rhyme (as in the case of *snail mail*), which greatly enhance their ludic potential.

With a few exceptions (Marchand 1960, Thun 1963, Allan 1986 : 250f, Katamba & Stonham 2006 : 305), alliterating and rhyming compounds have been more-or-less ignored in the linguistic literature, even though they have always been around in the English language. As Beal (1991 : 140) points out, their preponderance can be well detected in periods of the English language when there was an upsurge in linguistic creativity and the use of colloquial forms was licensed in written texts, as opposed to periods when rigid, conventional, rule-based usage was preferred. Hence, alliterating and rhyming compounds thrived in Chaucer's time, the Elizabethan era and during the Romantic movement. There has also been a steady increase in their use from the end of the twentieth century onwards, thanks to the media: increasingly witty, playful and inventive expressions need to be coined to catch (and hold) our attention. In fact, novel expressions often foreground the form (ie the alliterating, rhyming pattern) to the extent of backgrounding the intended message or meaning of the compound itself. Chovanec (2008 : 219) rightly remarks that the "creative appropriation of forms of language sometimes erupts into wanton word play".

Much has been said about the role of analogy in language — Varro, for instance, made note of it as early as the first century BC. Analogy has also played a significant role in historical linguistics, identified as one of the main means of change. It drew major interest in the American descriptivist tradition (especially Bloomfield 1933), but later on was mostly neglected by generative grammarians (Blevins & Blevins 2009a : 2; for an overview with references, see ibid and Itkonen 2005). Recently, however, it has been receiving increasing attention (see Bybee 2010, for example), especially within the area of word-formation. Much of the literature on the subject, nevertheless, focuses on the semantic and syntactic aspects (see, eg Booij 2010, van Jaarsveld et al. 1994, Krott 2009, Ryder 1994), leaving the topic of phonological analogy mostly neglected (though see Wang 2005, for a discussion of "reduplicated" forms, including rhyming and alliterating strings in English). Yet evidence suggests that phonological constraints

[1] All definitions are from the *OED,* unless otherwise stated.

can influence and govern syntactic, semantic and morphological aspects in English: Schlüter (2005), for instance, has demonstrated that the rhythmic alternation of stressed and unstressed syllables determines the structures of words, phrases and sentences. Bauer (2003 : 159) has also noted that relationships between words may rest on so-called "resonances" (which term he borrowed from Hockett 1987): "hearing one word makes you think of another because of some similarity between the two." Resonance can be based on phonological similarity, such as alliteration, assonance, rhyme and similarity in syllable number or stress pattern.

Within this vein, what I wish to demonstrate in the paper is that when coining new and highly creative expressions based on metaphor and metonymy, the choice of the composite words can be heavily influenced by phonological analogy. In my view, phonological analogy serves a number of important functions, both semantic and pragmatic: (1) as an attention-seeking device it enhances emphasis; (2) helps to decipher the meaning of a novel expression; (3) aids a novel expression's acceptability and long-term retention; (4) signals an informality of meaning; and (5) helps in the creation of a "social bond" between the participants of a speech situation.

The structure of the argument is as follows: §2 outlines the reasons for inventing novel words, with a focus on metaphor- and metonymy-based compounds. §3 provides a detailed analysis of the three major types of phonological analogy that have been identified in the paper—alliteration, rhyme between constituent$_1$ and constituent$_2$, and rhyme with an already existing compound —, as well as the various combinations of these within a cognitive linguistic framework. §4 discusses the results, while the last, §5 concludes.

2 Inventing new words

People invent new words all the time. In most of the cases this is done to create a name for a completely new category, such as *filter bubble* ('search results, recommendations, and other online data that have been filtered to match your interests, thus preventing you from seeing data outside of those interests'; source: Wordspy). The expression emerged with the advent of tailored internet advertisements (its earliest citation is from 2010), where the words/expressions that we search for in the search engines provide clues as to what might be of interest — and, ultimately — sellable to us. Yet new words also emerge for reasons other than naming. Both Hohenhaus (2007) and Lehrer (2003) point out that new words are often coined for attention-seeking or foregrounding and are especially prominent in newspaper or magazine articles and advertisements. The reason

for this phenomenon is simple: the goal is to attract the reader's attention (and, in the case of ads, to ensure memorability). Attention-seeking is best achieved via witty, creative wordplay that is often based on puns and deliberate breaking or bending of rules (Wang 2005). However, as underlined by Lehrer (2003 : 370), the underside of creativity is that such words often need more effort on the side of the reader/hearer to interpret. Why then do we engage in novel and creative word formation? According to Lehrer, the answer lies in the satisfaction that we feel when we are able to figure out the meaning of a novel expression. This feeling reinforces within us a positive attitude toward the "speech event and possibly toward the speaker and the referent of the neologism. If a positive attitude is created, this will reinforce the speaker's intention if the goal is for the hearer to remember the item (and maybe buy the product)" (ibid), and, ultimately, to create a "social bond" (Malinowski 1923 : 314). In their list of social and discourse functions for humour and wit, Long & Graesser (1988 : 57) also note that sometimes witty, creative language is not used to maintain discourse management or social control, but is "generated for fun as social play", in order to build up a "comraderie", "strengthen social bonds" and "foster group cohesiveness".

2.1 Creative compounds

Undoubtedly, the most common and handy process for creating new words is compounding. So much so, in fact, that compounding is the most common word-formation method used in the languages of the world (Guevara & Scalise 2009). Why is this so? The reasons are straightforward: compounds are like mental shorthand in the sense that maximum information is packed into a minimally complex form. This wealth of meaning and economy of form, however, is made possible by the vast array of possible semantic relationships that can exist between the constituents of a compound. What is more, compounds can also be affected by metaphor and/or metonymy. As emphasized by Benczes (2006) and Guevara & Scalise (2009), metaphorical (and/or metonymical) compounds are extremely common in language, and, as demonstrated by Benczes (2006), such expressions can be analyzed remarkably well within a cognitive linguistic framework. The use of metaphors and metonymies in novel compound formation opens up a limitless supply of innovation and creativity in novel word-formation. Compounds that utilize metaphor and metonymy make use of the creative associations that exist between concepts; associations based on similarity, analogy or contiguity. Following Benczes (2006), metaphorical and/or metonymical compounds will be termed here henceforth as "creative compounds".

One of the most interesting questions that arise with regard to novel creative compounds is why do people coin them at all. More specifically, why do we think up expressions that are based on more associative, inventive and creative thought processes, and which, presumably, take up more time in their comprehension than their more transparent versions (Libben et al. 2003)? Lehrer (2003), quoted above, has pointed out the significance of the positive effect that the "solving" of innovative, creative novel words and expressions have upon us. In addition, Benczes (2010) has also outlined a number of reasons for the phenomenon of creative compound formation: Here, I will mention three of these which are crucial for the present study as well:

1. Metaphorical and metonymical thinking is a normal, everyday ability of humans; so much so that that even 3-year-old children are able to interpret metaphorical compounds (Gottfried 1997). Furthermore, both metaphor and metonymy can be considered as a type of construal operation (see, eg Langacker 1987, Talmy 1988, Croft & Cruse 2004), and as such, a certain way of interpreting/conceptualizing the world around us. What this implies, therefore, is that the use of and reliance on conceptual metaphors and metonymies in word formation (more specifically, in compounding) must also be an absolutely natural process.
2. If compounds are generally taken to be "compact", in the sense that they are able to express complex ideas in an economical manner, then metaphorical compounds are doubly so. First, such compounds — just like any old compound — are also able to express intricate notions in a compact form. Second, they do this in a very "vivid" manner (Gibbs 1994 : 125), as metaphorical imagery is able to carry much more information than literal language, thanks to the rich and vivid images.
3. Last but not least, the metaphorical imagery that such compounds exhibit helps us better remember them than non-metaphorical ones. Bauer (1983 : 142) alludes to this property of metaphorical compounds as their "positive mnemonic effect".

3 Unravelling the meaning: Phonological analogy

The problem that creative compounds pose, however, is that they are intricate thought puzzles that defy the usual three-level categorizational hierarchy, where the subordinate term is usually a composite of the basic level term and a modifying element, such as *kitchen sink* or *cheese sandwich* (Ungerer & Schmid 1996, Kövecses 2006). After all, a *wall wart* ('the blocky

plug/transformer combinations used with modems, telephones, and other consumer electronics'; source: Wordspy) is by no means a type of wart (although it does have to do with walls), yet there are plenty of such novel expressions emerging all the time. The question necessarily arises: what can help the reader/hearer to unravel the puzzle that such a compound represents? Two answers come to mind: first of all, the context in which they appear. It is not uncommon for texts to provide a gloss or definition for the compound, ensuring that the reader fully understands the meaning of the novel expression. It should be noted, nevertheless, that when a definition or gloss appears for the novel expression in the text, then there is no satisfaction felt in solving the meaning (as pointed out by Lehrer 2003, see above).

The second key that can help us figure out the meaning of novel creative compounds is phonology — more specifically, phonological analogy to already existing forms. For example, *brain gain* ('an increase in the number of highly skilled intellectual and technical workers due to those workers relocating from a less favourable environment'; source: Wordspy) is a play on the lexicalized compound *brain drain* ('the emigration of highly trained or qualified people, regarded as detrimental to a country's economy or society'). The fact that both compounds have the same phonological makeup save for the first vowels in the head component is by no means accidental. Thanks to the phonological similarity, when coming across *brain gain,* the reader/hearer can also access *brain drain,* which considerably helps the unravelling of the meaning of *brain gain.*[2] From a cognitive linguistic perspective, *brain drain* is a metaphor- and metonymy-based compound, where the modifying element, *brain,* stands for intelligent people (via the DEFINING PROPERTY FOR CATEGORY conceptual metonymy), while the head element, *drain,* is based on a complex metaphor system where highly skilled individuals are conceptualized as resources (via the RESOURCES ARE SUBSTANCES (FLUIDS)) metaphor), and the countries which possess this resource are conceptualized as containers (via the LOCATION OF THE RESOURCE IS A PHYSICAL CONTAINER metaphor). In order to obtain this resource, it has to be removed from the container (OBTAINING THE RESOURCE IS PHYSICALLY REMOVING THE SUBSTANCE FROM THE CONTAINER). The meaning of *brain gain* is based on the same metonymy and metaphor system: *brain* stands for intelligent people, while *gain* is a manifestation of the ACQUISITION OF RESOURCE IS OBTAINING/

[2] Furthermore, in both compounds the modifying element (*brain*) rhymes with the head (*drain* and *gain,* respectively). See §3.2 for a detailed analysis of this type of analogy.

ACQUIRING SUBSTANCE metaphor. The meaning of *brain gain*, therefore, is relatively easily available to us once we can access the meaning of *brain drain* as well.

Phonological analogy, therefore, can be a useful mechanism in comprehending novel coinages. Nevertheless, it is hypothesized here that phonology also plays a significant role in the creation of novel compounds: whoever coined *brain gain* was probably influenced by the already existing form of *brain drain*. Therefore, phonological analogy influences both the *production* and the *comprehension* of novel creative compounds. In the following, the paper will examine how exactly phonology constrains the formation of creative compounds. Three major types of phonological analogy have been identified: alliteration, rhyme between constituent$_1$ and constituent$_2$, and rhyme with an already existing compound. These three major types also occur in combination with one another, resulting in seven subtypes — all of which will be analyzed in detail in the forthcoming sections.

3.1 Alliteration

Alliteration has been in use in the English language for a very long time — as far as the written record is concerned, it dates back to Old English poetry, such as *Beowulf*, the most substantial epic poem of the period (Sanders 1994 : 20). Turning to everyday speech, Wales (1989 : 18) makes note of the fact that alliteration shows up regularly in popular idioms (eg *dead as a doornail*), while Lindstromberg & Boers (2008) remark that it appears frequently in lexical chunks (group of words commonly found together). More recently, Gries (2011) examined two types of multi-word units, V–NP$_{\text{DirObj}}$ idioms (such as *bite the bullet*) and the *way*-construction (such as *find one's way*), and has shown that both types show strong alliteration effects. Unsurprisingly, it is also a quite common phenomenon in compounds, whether lexicalized or novel. According to Beal (1991 : 141), alliterative compounds "are almost always slangy, playful forms, which may well have always been used in colloquial English". An example for a "playful", yet fully lexicalized alliterative compound is *belly button* ('navel'). Benczes (2010 : 222) hypothesizes that the reason why *belly* is selected in *belly button* to stand as the modifier, and not *tummy* (which is not only synonymous with belly but is also similarly informal), is due to alliteration. Compare, however, *tummy trouble* ('stomach pain', cf www.tummytrouble.

co.uk), which is not **belly trouble* — most probably for the same reason as above.[3]

As far as novel expressions are concerned, *Lexus lane* ('a highway that is normally restricted during rush hour to vehicles carrying multiple passengers, but that can also be used for a fee by single-occupant vehicles'; source: Benczes 2006 : 149–151) can be analyzed as a metonymy-based expression. Through the CONTROLLED FOR CONTROLLER metonymy, *Lexus* (the vehicle controlled by the driver) stands for the driver (the controller of the vehicle); and by the MEMBER OF A CATEGORY FOR A CATEGORY conceptual metonymy, *Lexus* (the brand of an expensive car) stands for any brand of expensive car. As Benczes (2006 : 151) points out, the ironic connotation of the compound can be traced back to the fact there is no point in creating restricted lanes if the toll does not stop wealthy drivers congesting it. It is interesting to note that the first constituent of the compound is *Lexus,* even though it could have been any other luxury car name. Benczes hypothesizes that the selection of the constituent was motivated by phonological criteria, overriding other possible (and non-alliterating) candidates.

Alliteration, which is also referred to as "initial rhyme" (Wales 1989 : 18) is a very handy tool for foregrounding the initial sounds to achieve emphasis and to aid memorability (for a similar view see also Lea et al. 2008, Lindstromberg & Boers 2008). Both of these qualities are important when coining a new expression: the more attention (via alliteration) a creative compound gets, and the easier it is to memorize, the better chances it has to go into wider use. Moreover, the alliterated syllables are also often the stressed ones, and as such, represent a rhythmic pattern (Wales 1989 : 15). This rhythm (and rhyme-like quality) can be further strengthened by the identical number of syllables in the respective modifier and head constituents (thus further enhancing both emphasis and memorability): see, for instance, *street spam,* where both the modifier and the head consists of one syllable, or *belly button,* which has two syllables each. All in all, when coining such compounds the selection of both the modifier and the head is — in all probability — heavily influenced by phonological constraints. I agree with Gries (2011 : 504), who maintains that when such alliterating expressions are created, it is due to the alliterating effect that the expression is "fun to produce and easy to memorize" (ibid) — which is further accen-

[3] Note that euphemisms for "travellers' gastrointestinal disorders" are also based on alliterating patterns — cf *Banjul belly, Basra belly, Bali belly, Tut's tummy,* etc — to name but a few. Source: www.wolfstad.com/2007/01/international-euphemisms-for-travellers-gastrointestinal-disorders (8 November 2012)

tuated and complemented by the rich (and often humorous) imagery that metaphorical and metonymical compounds possess.

3.2 Rhyme between constituent$_1$ and constituent$_2$ ("rhyming compounds")

Often, the head element of a compound expression rhymes with the modifier, as in *backpack, bigwig* or *hotshot,* to name just a few of the lexicalized units. Such compounds are dubbed as "rhyming compounds" in linguistic literature (for a full discussion, see Benczes 2012). Marchand (1960 : 355) observed that rhyming compounds have always been on the increase in the English language "in such environments as are not governed by restraining literary tendencies or social codes." Needless to say, present-day language customs, which heavily concentrate on the internet and the media, perfectly fit Marchand's description as ideal environments for the emergence of rhyming compounds. A prime example for this phenomenon is *snail mail,* which emerged after the appearance of e-mail. The compound emphasizes the fact that regular mail is much slower than e-mail, and manages to achieve this in a quite humorous manner. This jocular effect can be traced back to the metaphor and metonymy on which the compound itself is based on. First of all, the modifier, *snail,* stands for slowness, via the DEFINING PROPERTY FOR CATEGORY metonymy (as the salient property of a snail is its slowness). Moreover, there is a metaphorical relationship between the head and its modifier, where the former is metaphorically construed as the latter. In this case, we have a man-made, complex object (mail) conceptualized as an animal (snail). Needless to say, the selection of the modifier element, *snail,* was most probably influenced by its rhyme to *mail* — after all, there are other animals as well which are notoriously slow, such as the tortoise (fabled by Aesop as well). The inherent humour of the expression lies in the clash between the phonological similarity of the component nouns and their very apparent conceptual dissimilarity.

Rhyme—similarly to alliteration—creates emphasis (that is, it draws attention to the expression) and also eases memorability (that is, it is easier later on to recall the expression from memory). However, what *snail mail* clearly shows is that rhyme also plays a significant role in intensifying the meaning of a compound. The rhyming feature lends it a more playful quality that is in perfect line with the meaning. In short, informality of form stands for informality of meaning: the compound is strictly informal in its usage. Moreover, rhyme is also a source of enjoyment; consequently, a rhyming compound most probably sounds more pleasing to the ear than a non-rhyming one. Note that creative compounds are in themselves often

humorous (thanks to their imagery), a feature which is well underlined by the playfulness of rhyme.

3.3 Rhyme with an already existing compound

Often, creative compounds rhyme with an already existing (creative) compound. It is hypothesized here that this analogy helps the hearer/reader to uncover the meaning of the novel expression by foregrounding the source compound. Such an example is *grass ceiling* ('a set of social, cultural, and discriminatory barriers that prevent or discourage women from using golf to conduct business', source: Wordspy): when coming across the expression, it is inevitable that the more lexicalized compound *glass ceiling* ('an unofficial or unacknowledged barrier to personal advancement, esp. of a woman or a member of an ethnic minority in employment') also comes to mind, thanks to the close phonological resemblance between the two. *Glass ceiling* is an instantiation of the CAREER IS AN UPWARD JOURNEY metaphor: reaching a socially higher position is understood as upward physical movement in the course of a journey (see Kövecses 2010 : 252). The compound brings forth the idea that the journey has an end point for women, the "ceiling", while no such end point exists for men — therefore, their career path is unlimited. The fact that the ceiling is made of glass implies that women are able to "see" the possible path that their careers might follow (but, due to the limiting "ceiling", they are, nevertheless, unable to go ahead and do so). The novel coinage of *grass ceiling* ties into the meaning of the source compound, as it also refers to the limited opportunities in business for women as opposed to men, but it places this limiting factor unto the golf course. This specification of meaning is accomplished by the modifying element, *grass*, which metonymically stands for the golf course (via the MATERIAL CONSTITUTING AN OBJECT FOR THE OBJECT metonymy).

The idea that the meaning of a novel compound is reached via accessing a more lexicalized expression is in full agreement with the commonplace claim within cognitive linguistics that word meanings are encyclopaedic (for a discussion, see Langacker 1987 : 155–158). As Langacker points out, "concepts presuppose other concepts and cannot be adequately defined except by reference to them" (1987 : 147) — therefore, we routinely and automatically search for connections between words, and make use of these in the comprehension of novel ones.

3.4 Rhyme of constituent$_1$ with constituent$_2$ plus alliteration

The combination of alliteration and rhyme in creative compounds has a rather powerful effect, and are thus often employed together. For example,

duvet day ('a company-approved day off that employees can take if they feel too tired to work') would not sound as effective if the modifying element would be *pillow* or *bed,* even though both could be possible candidates, as the metonymies that underlie the compound's meaning do not necessarily require *pillow* (just something that is associated with sleeping). What are these metonymies exactly? First of all, *duvet* stands for sleeping, via the OBJECT INVOLVED IN THE ACTION FOR THE ACTION metonymy. Next, a further metonymy is required, whereby sleeping can stand for relaxing, thanks to the ACTION FOR RESULT metonymy (after all, employees are not required to sleep on *duvet day*; they can simply relax, which, nevertheless, might involve sleeping as well). Evidently, the metonymies that operate on the compound's meaning would just as easily work with *pillow* or *bed,* but ?*pillow day* or ?*bed day* does not sound as good as *duvet day,* where the rhyme, combined with the alliteration, makes the compound roll off the tongue very easily, thus paving the way for long-term retention and easier recall.

Needless to say, rhyme and alliteration also show up in metaphor-based creative compounds as well. Such an example is the already cited *wall wart,* which is not a fully rhyming compound, since the constituents differ with regard to the final consonant (but are, nevertheless, similar with regard to the initial consonant and the vowel). Such cases of imperfect rhyme are referred to as "half-rhyme" in stylistics (Wales 1989 : 39). *Wall wart* is based on personification, whereby a house is conceptualized as a human face: the windows are the eyes, the door is the mouth, and the walls correspond to the skin. Within this conceptual metaphor, warts map onto unattractive elevations on the surface of the wall. In fact, this conceptualization can be traced back to one of the general meanings of *wart,* as given by *Webster's*: 'an imperfection, failing, flaw, etc'. This meaning is based on the OBJECT FOR EFFECT metonymy, whereby the physical wart (the object) stands for the unpleasant effect it causes. In the compound *wall wart,* the metonymy (OBJECT FOR EFFECT) and the metaphor (HUMAN PROPERTIES ARE THE PROPERTIES OF INANIMATE THINGS) complement one another, thereby strengthening the overall effect of the expression — which, similarly to *duvet day,* is further emphasized by the combination of rhyme and alliteration.

3.5 Rhyme with an already existing compound plus alliteration

An intriguing compound that has alliterating consonants and rhymes with an already existing one is *Baby Bills* ('nickname for the resulting companies should the US government decide to break up Microsoft into smaller units';

cf *Baby Bells*: 'the companies created after the breakup of AT&T's telephone monopoly'; source: Wordspy). The compound can be traced back to both metonymy and metaphor: the head element, *Bills,* can be analysed as an instantiation of the HEAD OF AN INSTITUTION FOR THE INSTITUTION metonymy, whereby the company's CEO, Bill Gates, stands for the company he owns. At the same time, thanks to the modifier element *Baby,* the resulting smaller companies after the breaking up of Microsoft are conceptualized as miniature—baby—versions of Bill Gates, which is a metaphorical process that is based on personification. The novel compound is formed on the analogy of *Baby Bells,* which can be analyzed by more-or-less the same metonymy and metaphor (in this case the head element is based on the inventor of the telephone, Alexander Graham Bell, who at the same time was one of the shareholders of the first telephone company, the American Bell Telephone Company, which later on evolved into the American Telephone and Telegraph Company, ie AT&T; Huurdeman 2003). As long as the hearer/reader is familiar with *Baby Bells,* it is relatively simple to work out the meaning of *Baby Bills,* too. The rhyme brings to mind the more familiar *Baby Bells,* whose metaphorical and metonymical conceptualization—which is more-or-less similar in the case of *Baby Bills*—leads to the meaning of *Baby Bills.*

It is an interesting feature of *Baby Bells* that the head element is, nevertheless, slightly misleading with regard to the overall meaning of the compound, since the company that was broken up into smaller units was AT&T, and not the Bell Telephone Company. It is highly probable that the selection of the head element was governed by phonological reasons (ie alliteration), which ultimately overrode the semantic ones. *Baby Bills,* in this respect, is semantically more transparent, since here the metonymical link between Bill Gates and his company is more straightforward.

3.6 Rhyme with already existing compound plus rhyme of constituent$_1$ with constituent$_2$

A prime example for a creative compound that exhibits double rhyme in the sense that the constituents rhyme with one another *and* the compound as a whole rhymes with an already existing expression is *brain gain.* As already discussed at the beginning of §3, *brain gain* has been formed on the phonological analogy of *brain drain.* This phonological similarity provides the hearer/reader considerable help in working out the meaning of *brain gain,* which—along with the source compound—is also an instantiation of the RESOURCES ARE SUBSTANCES (FLUIDS) metaphor. While in the case of *brain drain* highly skilled professionals are conceptualised as resources

that are removed from a container (ie their native countries), *brain gain* represents the mirror conceptualization of this process, whereby highly skilled professionals are viewed as resources that are obtained by another country/container (via the ACQUISITION OF RESOURCE IS OBTAINING/ACQUIRING SUBSTANCE metaphor). The meaning of *brain gain,* therefore, is accessible with the help of the more lexicalized *brain drain.*

3.7 Rhyme with already existing compound, rhyme of constituent$_1$ with constituent$_2$, plus alliteration

One such coinage that combines all three phonology-based analogies, viz rhyme with an already existing compound, rhyme of constituent$_1$ with constituent$_2$ and alliteration is *Fleet Feet.* The term is not a real compound in the sense that it is not a common noun but a brand name; *Fleet Feet* is a company that specializes in running gear. Nevertheless, it has been included in the paper for two reasons. First, *Fleet Feet* is a composite of common nouns; therefore, the constituents — and the composite as a whole — follow the same linguistic rules and patterns as the compounds that have been analysed in the preceding sections. Second, for a brand name to be successful, it has to be witty, creative, attention-grabbing and easy to remember, and these are exactly the same qualities that the creative compounds examined in this paper also possess. All in all, *Fleet Feet* must have been coined on the basis of the same creative use of language as *belly button, glass ceiling* or *duvet day.*

Unfortunately there is no information on the company's website (www.fleetfeetsports.com) on how the brand name was coined; therefore, similarly to the other compounds analysed in the paper, we can only rely on hypotheses. The modifier, *fleet,* is a less common (literary) adjective, meaning 'swift, nimble'. In fact, the brand name as a whole might have been based on the expression *fleet-footed* ('swift in movement').[4] If this is indeed the case, then the brand name is metonymical: the instrument (fast feet) stands for the action (running). However, the head element is used in the plural, not the singular (cf the singular use of *foot* in the idiom itself). It is possible that the plural use was motivated by (1) its rhyming quality with the modifier; and (2) with an already existing composite, namely *Fleet Street* (used to refer to the British national newspapers and the journalists who work for them). Here, there is no semantic connection between the source expression (*Fleet Street*) and *Fleet Feet,* but since the latter is a brand name

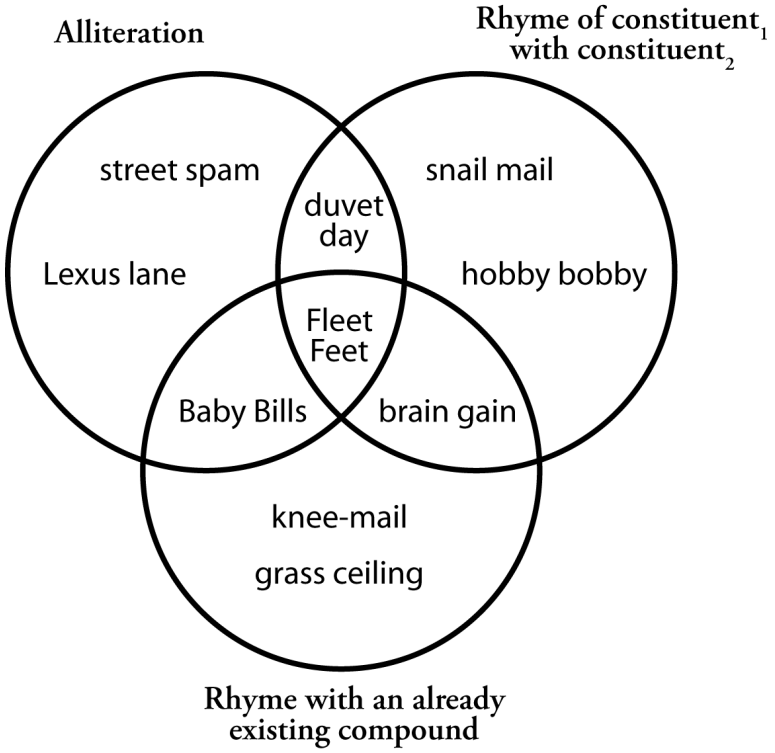
[4] According to the *LDOCE,* the expression *fleet of foot* also exists, meaning 'fast at running'.

(and not a common noun), it is not absolutely necessary for the source to provide clues as to the meaning of the novel composite. Nevertheless, the double rhyme, along with the alliteration, considerably improve the memorability of *Fleet Feet*, which is the ultimate goal of any brand name.

4 Discussion of results

Based on the above data, it can be hypothesized that phonological analogy can strongly motivate the formation of novel (creative) compounds. Three possible patterns have been identified: alliteration, rhyme of constituent$_1$ with constituent$_2$, and rhyme with an already existing (creative) compound. These three major types of phonological analogy can also be combined with one another; the types and subtypes of phonological patterns can be depicted as a series of interlocking sets (see figure 1).

figure 1: The types and subtypes of phonological analogy in creative compound formation.



If phonological analogy does motivate the formation of novel creative compounds, then the question necessarily arises *why* we rely on this method of compound formation. On closer inspection, a number of reasons come to mind. First of all, both alliteration and rhyme are very effective in foregrounding an expression to achieve emphasis (Wales 1989 : 18). Coupled with the rich metaphorical and metonymical imagery that creative compounds possess, which in itself is also a potent attention-grabbing device, alliteration and rhyme act like exclamation marks in the sense that they help to direct our attention via the form to the content. Second, alliteration and rhyme play a significant role in helping the reader/hearer decipher the meaning of the novel expression by phonologically linking it to the source lexeme. This reasoning is in line with the results of Gries (2011 : 507), who, in his study of alliteration in multi-word units, came to the conclusion that "the perception of phonological similarity may aid the identification of semantic/conceptual constituents/poles". Third, alliteration and rhyme further enhance the "positive mnemonic effect" (Bauer 1983 : 142) of creative compounds; phonological similarity to lexicalized units aids the acceptability ratings of a novel expression (Bybee 2010 : 60–61). Fourth, both alliteration and rhyme lend a more playful, informal quality to the compounds, which—as in the case of *snail mail* for example—is in agreement with the informality of the compound's meaning. Therefore, alliteration and rhyme signal an informality of meaning. Fifth, the deliberate use of alliteration and rhyme in novel compound formation is not only enjoyable to produce for the speaker, but also requires the "active participation" of the hearer/reader in appreciating them (Chovanec 2008 : 222–223). Consequently, alliterating and rhyming creative compounds can assist in the creation of a "social bond" (Long & Graesser 1988 : 57, Malinowski 1923 : 314) between the participants in a speech situation. Creative compounds are in themselves witty and innovative, as the imagery or conceptualization that they are based on is often original, humorous and unconventional. Coupled with alliteration and rhyme, the effect is very powerful. This playful—ludic—function of language is severely underestimated by linguists, claims Crystal (1998), even though language play serves an important social function by helping to break the ice and creating a sense of inclusion.

5 Conclusion

When people play with language, they often invent new words or expressions, bending and (sometimes) breaking the rules of language in the process. This ludic activity is especially evident in novel metaphorical and metonymical compounds that are based on unconventional and often hu-

morous conceptualizations. Interestingly, these compounds are also often motivated by some sort of phonological analogy, that is, structural similarity to phonological form, which manifests itself as either alliteration or rhyme. The paper has identified several patterns of phonological analogy, and has argued that its use in the formation of metaphorical and metonymical compounds serves a number of important functions, such as foregrounding the expression, helping the hearer/reader to decipher the meaning, aiding the acceptability of the novel expression, signalling informality, and breaking the ice between the participants in a speech situation.

REFERENCES

Allan, Keith. 1986. *Linguistic Meaning. Vol. 1.* London: Routledge & Kegan Paul.

Bauer, Laurie. 1983. *English Word-Formation.* Cambridge: Cambridge University Press.

Bauer, Laurie. 2003. *Introducing Linguistic Morphology.* 2nd ed. Washington, DC: Georgetown University Press.

Beal, Joan. 1991. *Toy boys* and *lager louts*: motivation by linguistic form? In: Ingrid Tieken-Boon van Ostade and John Frankis (eds.), *Language Usage and Description: Studies Presented to N. E. Osselton on the Occasion of His Retirement.* Amsterdam and Atlanta: Rodopi. 139–148.

Benczes, Réka. 2006. *Creative Compounding in English: The Semantics of Metaphorical and Metonymical Noun–Noun Combinations.* Amsterdam & Philadelphia: John Benjamins.

Benczes, Réka. 2010. Setting limits on creativity in the production and use of metaphorical and metonymical compounds. In: Sacha Michel and Alexander Onysko (eds.), *Cognitive Approaches to Word Formation.* Berlin & New York: Mouton de Gruyter. 221–245.

Benczes, Réka. 2012. Just a load of *hibber-gibber*? Making sense of English rhyming compounds. *Australian Journal of Linguistics* 32(3): 299–326.

Blevins, James P. and Juliette Blevins. 2009a. Introduction: Analogy in grammar. In: Blevins & Blevins 2009b : 1–13.

Blevins, James P. and Juliette Blevins (eds.). 2009b. *Analogy in Grammar: Form and Acquisition.* Oxford: Oxford University Press.

Bloomfield, Leonard. 1933. *Language.* Chicago: University of Chicago Press.

Booij, Geert. 2010. Compound construction: schemas or analogy? A construction morphology perspective. In: Sergio Scalise and Irene Vogel (eds.), *Cross-Disciplinary Issues in Compounding.* Amsterdam & Philadelphia: John Benjamins. 93–108.

Bybee, Joan. 2010. *Language, Usage and Cognition.* Cambridge: Cambridge University Press.

Chovanec, Jan. 2008. Focus on form: foregrounding devices in football reporting. *Discourse and Communication* 2(3): 219–242.

Croft, William and Allan Cruse. 2004. *Cognitive Linguistics.* Cambridge: Cambridge University Press.

Crystal, David. 1996. Language play and linguistic intervention. *Child Language Teaching and Therapy* 12(3): 328–344.

Crystal, David. 1998. *Language Play.* London: Penguin Books.

Dienhart, John M. 1998. A linguistic look at riddles. *Journal of Pragmatics* 31(1): 95–125.

Geller, Linda G. 1985. *Wordplay and Language Learning for Children.* Urbana, IL: National Council of Teachers of English.

Gibbs, Raymond W. 1994. *The Poetics of Mind.* Cambridge: Cambridge University Press.

Gottfried, Gail M. 1997. Using metaphors as modifiers: children's production of metaphoric compounds. *Journal of Child Language* 24(3): 567–601.

Gries, Stefan Th. 2011. Phonological similarity in multi-word units. *Cognitive Linguistics* 22(3): 491–510.

Guevara, Emiliano and Sergio Scalise. 2009. Searching for universals in compounding. In: Sergio Scalise, Elisabetta Magni, and Antonietta Bisetto (eds.), *Universals in Language Today.* Springer. 101–128.

Hockett, Charles F. 1987. *Refurbishing Our Foundations: Elementary Linguistics from an Advanced Point of View.* Amsterdam: John Benjamins.

Hohenhaus, Peter. 2007. How to do (even more) things with nonce words. In: Judith Munat (ed.), *Lexical Creativity, Texts and Contexts.* Amsterdam & Philadelphia: John Benjamins. 15–38.

Huurdeman, Anton A. 2003. *The Worldwide History of Telecommunications.* Hoboken: John Wiley and Sons, Inc.

Itkonen, Esa. 2005. *Analogy as structure and process.* Amsterdam & Philadelphia: John Benjamins.

Jaarsveld, Henk J. van, Riet Coolen, and Robert Schreuder. 1994. The role of analogy in the interpretation of novel compounds. *Journal of Psycholinguistic Research* 23(2): 111–37.

Katamba, Francis and John T. Stonham. 2006. *Morphology.* 2nd ed. Houndsmills: Palgrave Macmillan.

Kövecses, Zoltán. 2006. *Language, mind, and culture: A practical introduction.* Oxford: Oxford University Press.

Kövecses, Zoltán. 2010. *Metaphor: A Practical Introduction.* 2nd ed. Oxford: Oxford University Press.

Krott, Andrea. 2009. The role of analogy in compound words. In: Blevins & Blevins 2009b : 118–136.

Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar. Volume I: Theoretical Prerequisites.* Stanford: Stanford University Press.

Lea, R. Brooke, David N. Rapp, Andrew Elfenbein, Aaron D. Mitchel, and Russell Swinbourne Romine. 2008. Sweet silent thought: Alliteration and resonance in poetry comprehension. *Psychological Science* 19 : 709–716.

Lehrer, Adrienne. 2003. Understanding trendy neologisms. *Rivista di Linguistica* 2 : 369–382.

Libben, Gary, Martha Gibson, Yeo Bom Yoon, and Dominiek Sandra. 2003. Compound fracture: The role of semantic transparency and morphological headedness. *Brain and Language* 84 : 50–64.

Lindstromberg, Seth and Frank Boers. 2008. The mnemonic effect of noticing alliteration in lexical chunks. *Applied Linguistics* 29(2): 200–222.

Long, Debra L. and Arthur C. Graesser. 1988. Wit and humor in discourse processing. *Discourse Processes* 11 : 35–60.

Longman Dictionary of Contemporary English. 1999. 3rd ed. International students' edition. Harlow: Longman.

Malinowski, Bronislaw. 1923. The problem of meaning in primitive languages. In: Charles K. Ogden and Ivor A. Richards (eds.), *The Meaning of Meaning.* London: Routledge & Kegan Paul. 296–336.

Marchand, Hans. 1960. *The Categories and Types of Present-Day English Word-Formation: A Synchronic-Diachronic Approach.* Wiesbaden: Otto Harrassowitz.

Oxford English Dictionary. 1989. 2nd ed. Online version. Oxford: Oxford University Press.

Ryder, Mary Ellen. 1994. *Ordered Chaos: The Interpretation of English Noun–Noun Compounds.* Berkeley & Los Angeles: University of California Press.

Sanders, Andrew. 1994. *The Short Oxford History of English Literature.* Oxford: Clarendon Press.

Schlüter, Julia. 2005. *Rhythmic Grammar: The Influence of Rhythm on Grammatical Variation and Change in English.* Berlin: Walter de Gruyter.

Talmy, Leonard. 1988. The relation of grammar to cognition. In: Brygida Rudzka-Ostyn (ed.), *Topics in Cognitive Linguistics.* Amsterdam & Philadelphia: Benjamins. 165–205.

Thun, Nils. 1963. *Reduplicative Words in English: A Study of Formations of the Types* Tick-Tick, Hurly-Burly, *and* Shilly-Shally. Uppsala.

Ungerer, Friedrich and Hans-Jörg Schmid. 1996. *An Introduction to Cognitive Linguistics.* Harlow: Pearson Education Limited.

Wales, Katie. 1989. *A Dictionary of Stylistics.* Harlow: Longman.

Wang, Shih-ping. 2005. Corpus-based approaches and discourse analysis in relation to reduplication and repetition. *Journal of Pragmatics* 37(4): 505–540.

Webster's New World Dictionary of American English. 1988. 3rd college edition. New York: Simon & Schuster, Inc.

Réka Benczes
rbenczes@gmail.com
Eötvös Loránd University
Budapest

Alexander Murray, a Scottish clergyman and orientalist on the origins of language

András Cser

The Author

The purpose of this paper is to present a now little-known work published two hundred years ago by a now little-known author (who was relatively well known at his time). This is Alexander Murray's *Philosophical History of the European Languages*, published in 1823.[1] The central question around which this book revolves is the emergence and the prehistory of the languages that we now call Indo-European or, more precisely, a subset of these languages (since some of them were not known at all at that time, such as Hittite or Tokharian, some were not known to be Indo-European, such as Armenian or Albanian).

But who was this Alexander Murray (1775–1813)? He was a Scottish clergyman and philologist with a very humble background, who rose to some prominence in 1812, when he was elected professor of Oriental philology at Edinburgh University. Before he actually started teaching he published a grammar of Hebrew called *Outlines of Oriental Philology*, and then after just a couple of lectures his health broke down and he died of consumption at the age of 38. The book called *Philosophical History of the European Languages* was published posthumously ten years after his death, and was edited by fellow orientalist David Scot. The book is based on Murray's extensive handwritten notes, but the final arrangement (though not the wording itself) is Scot's work. The book became quite well known, and only two years after its publication it was even translated into German.

[1] The book is freely available at this URL: books.google.hu/books?id=oJpJAAAAcAAJ

The Philosophical History of the European Languages

The structure of the book is the following. A lengthy editorial preface by David Scot explains how the book came into being and expatiates upon Murray's professional carreer. Then a ninety-page long biography of the author follows. The core of the book is the discussion — only about 140 pages long — divided into six chapters (see original Table of Contents below).

The discussion is accompanied by more than 300 pages of notes called *Facts and illustrations,* and this is where Murray relegated most of his data, the scant references to other authors, and some of his more extended arguments.

The central part of his arguments is found in chapter 3 (*Origin of the European languages*), and this is what we will focus on here. Murray made up a theory of how these languages came to be, more precisely, how the ancestor of these languages came to be and how it developed later. The idea is that originally there were only nine monosyllables all ending in AG (AG, BAG, DWAG. . .) and variants thereof. These captured elementary and very general meanings and sufficed for communication at a very elementary stage in the history of mankind. After a while, however, these monosyllables were combined with each other, some functioning as semantically central elements, some as modifying elements. The complex forms created at stage two then gradually developed into the forms found in the documented languages (with data mainly taken by Murray from Germanic languages, Greek and Latin). The following passage from the first pages of chapter 3 explains the first stage.

> Taste and philosophy will receive with aversion the rude syllables, which are the base of that medium, through which Homer, and Milton, and Newton, have delighted or illumined mankind. The words themselves, though inelegant, are not numerous: each of them is a verb and name for a species of action. Power, motion, force, ideas united in every untutored mind, are implied in them all. The variation of force in degree was not designated by a different word, but by a slight change in the pronunciation. Harsh and violent action, which affected the senses, was expressed by harsher articulations.
>
> I. To strike or move with swift equable penetrating or sharp effect was AG! AG! If the motion was less sudden, but of the same species, WAG. If made with force and a great effort, HWAG. . .
>
> II. To strike with a quick, vigorous, impelling force, BAG or BWAG, of which FAG and PAG are softer varieties. . .

figure 1: The table of contents of the Philosophical History of the European Languages

CONTENTS

OF

VOLUME FIRST.

Page.

LIFE of ALEXANDER MURRAY, D. D. xxix

TEXT, PART I.

CHAP. I. Account of the principal nations of Europe, and of the German tribes whose languages have reached posterity, - - 1

— II. Same subject continued.—Account of the Teutonic or German tribes, - 17

— III. Origin of the European languages, - 28

SECT. 1. On the first stage of the language, ib.

— 2. On the second stage of the language, 34

— IV. Origin of language continued—

SECT. 1. Formation of the pronouns, and cases of nouns, - - 41

— 2. Formation of the moods and tenses of verbs, - - - 50

— V. SECT. 1. Origin of derivative nouns, adjective, and substantive, and of derivative verbs, and the several species of the verb, - - 64

— 2. Of compound terminations in the principal parts of speech, 80

— VI. Sketch of the nomenclature of the external world and man, as fixed by the inventors of language, - - - 93

> . . .
> IX. To move with a weighty strong impulse, SWAG.
> These nine words are the foundations of language, on which an edifice has been erected of a more useful and wonderful kind, than any which have exercised human ingenuity. (pp. 31–32)

A few pages later Murray explains that certain languages, such as Chinese, are stuck in a sense at this stage, and make use of subsidiary measures, but others have moved on:

> The Chinese, whose language continues to be monosyllabic, had recourse to the expedient of varying the sound with the sense, a method sufficient to serve ordinary purposes, but of narrow compass, and liable to difficulties in practice. But the fathers of those nations, whose languages were to receive the most abstract or animated thoughts which the mind is capable of forming, began early to compound their words, and to multiply terms with all the fertility of arithmetical permutation. (p. 34)

And then he goes on to explain the workings of language at the second stage, when these primitive elements combine with one another:

> These words, of which the general and particular applications were familiar to every individual, when annexed to one another, modified the proper meaning of each radical, altered its sense from an absolute to a limited state, and expressed circumstances of time, degree, and manner of action. An example will illustrate this part of the subject. The radical WAG, as has been stated, signifies to move, shake, or agitate. This is its original unrestricted sense, not limited by time or any other circumstance. When GA, go, or DA, do, are joined to it; WAGIDA, which is a contraction for WAG-DAG, expresses that the action is finished or done; and GAWAGIDA, that it is done and gone by. This is the origin of the imperfectly preterite and perfectly preterite tense and participle in all the Teutonic dialects. (p. 36)

Or, to take a more complex case:

> Moderation is, in all its parts, MOG-DA-RA-TI-GA-NA-GA, formed in this succession; MAG, seize, comprehend, include, contain, measure; MOG-DA, measured, the preterite participle by DA, done: whence MOD and SA; MODUS, measure, bound; and SA agency, which is implied in all ancient nouns. Add RA, work, to MOD; there results MODERA, was making to have bounds, keeping in bounds; whence MODERATA, a preterite participle, kept

> in bounds. Add IG, make, to MODERA; and you have MODERATIG, an adjective, which means making kept in bounds, or having the quality of being kept in bounds. To MODERATIG join ANGA or ONGA, a compound of NA, make, and GA, go, which is the origin of our ING in present participles; and MODERATIGONGA is obtained, an abstract noun quite analogous to the Teutonic; BEWEGUNG, motion; HILDIGUNG, inclining; ERMAHNUNG, admonition. (p. 196)

The Background

Having briefly looked at the work itself and some of the central issues it addresses, let us turn to the question what intellectual and linguistic traditions Murray continues in his discussion.

Three such traditions can be discerned, which may be loosely termed philosophical, philological and grammatical. Of these the philosophical is the oldest and the most varied (not surprisingly), and itself includes two different directions of inquiry. One concerns the emergence of language, a highly popular topic in the two hundred years preceding Murray's time. It is well known that in the seventeenth and the eighteenth centuries respectively two rather different views dominated regarding the ultimate origins of language (Aarsleff 2006). In modern terms, the issue was whether language originated in the cognitive or the social functions of human beings. The latter view was more typical of the eighteenth century and usually entailed a greater role played by emotions, gestures and imitation in the emergence of language. Interestingly, Murray does not explicitly quote the English and Scottish philosophers who had expounded on the subject (such as Locke or Lord Monboddo); the only such philosopher he refers to (though not by name) is Adam Smith ("this is the opinion of the illustrious author of the *Theory of Moral Sentiments* and the *Essay on the First Formation of Language*" p. 178).

The other originally philosophical issue was the composition of words and, coupled with that, the question of arbitrariness. There is a time-honoured tradition going back to Plato that seeks to explain the meanings and origins of words with reference to their constituent sounds/letters and/or with reference to contracted phrases (cf Plato's explanation of *anthropos* 'man' as *anathron ha opope* 'who looks up at what he has seen', early medieval explanations of, eg *petra* 'stone' as *pedibus trita* 'trodden on by feet'). Contraction as a working method of etymology was carried to extremes by the Englishman Horne Tooke in his *Diversions of Purley* (published in Murray's lifetime, between 1786–1805), and it is clear that Horne Tooke had a great impact on Murray, as indeed on other contemporaries

too, who compared the work of both of them to the achievements of chemistry, then the *par excellence* science.

The philological tradition in this case means the philology of the Semitic languages on the one hand, with which Murray was familiar as an orientalist and which, by his time, had a European tradition going back three hundred years. On the other hand, it meant the recent interest in the European vernaculars and their history, including the numerous grammars of English published over the 18th century, Samuel Johnson's dictionary and the first editions of Old English texts. Specifically, Murray is greatly indebted to George Hickes's *Linguarum veterum septentrionalium thesauri grammatico-critici & archæologici,* a work on what they called northern languages and what we call Germanic languages now.

The grammatical tradition in this case is that of the analysis of word structure. As is well known, in the history of European grammatical thinking, words were not decomposed into morphemes until the 16th century, when Hebrew began to have its impact on grammatical analysis. We cannot here go into the full story of word analysis over several centuries, but the outlines are the following. There were, after 1500, two relevant notions, that of *root/stem* and *theme.* The former meant the formal core of a word, in a fashion somewhat similar to the modern use of the term. The latter meant the starting point of a paradigm, essentially the first item in a list of forms, with nouns always the singular nominative, with verbs usually the first person singular present tense (sometimes the third person singular, especially in Hungarian grammar). The two terms began to converge quite early on and in many grammars they appear as synonyms, as seen, eg in Palsgrave (1530: xxxi): "His [=a verb's] thre chefe rotes, that is to say, his theme, his preterit participle and his present infynityve... *je parle, jay parlé, parler.*"

When the notion of root became established in the European grammatical tradition, it was a purely practical descriptive device. Soon, however, it led to interesting questions that subsequently ramified into some of the most interesting language-related questions of the period. One such question was whether roots historically precede their derivatives, that is, are older languages more likely to exhibit more roots and fewer derivatives than languages at a later stage of development?

Before the nineteenth century, this question does not really emerge in this form for the reason that the notion of empirical historicity as opposed to abstract notional derivations was poorly understood (see Telegdi 1967). One exceptionally explicit discussion of sorts is found in works of Mäzke, a German grammarian of the late eighteenth century (eg 1776, 1780). He

makes a distinction between two stem-notions, the Grundsilbe and the Stammwort. The former means the stem in the practical-descriptive sense, ie what remains of a word form when all affixes have been removed. The latter means the ultimate core of the word, from which the Grundsilbe as well as its whole family of forms can be derived. For instance, the word *erröten* 'redden' has the Grundsilbe *röt* but the Stammwort *rot* ('red'). Mäzke cosistently uses the notion of Grundsilbe in a synchronic sense, while Stammwort also receives a diachronic interpretation. This, in a way, is an anticipation of the strongly diachronically oriented hypotheses of roots that so strongly defined linguistics in the nineteenth century.

Another question is how affixes relate to roots: did they develop from original autonomous roots themselves (as in what is now called grammaticalisation), or on the contrary, are they "growths" on their host roots that "sprout" out of the latter, as it were? Of the two possible answers the former has a long pedigree ultimately harking back to Aristotle and to modistic grammar, followed by Port Royal among others in the claim that all verbs include the verb meaning 'to be'. Also, this view was supported by the observation that in some languages personal pronouns and personal endings on verbs correspond formally as well as functionally (Arabic *anta* 'you-MASC' ∼ *faᶜalta* 'you did-MASC' vs *anti* 'you-FEM' ∼ *faᶜalti* 'you did-FEM' etc). Already in the early eighteenth century some German grammarians described suffixes such as *-heit, -tum* or *-lich* as deriving from full words. In the early nineteenth century, this idea developed into a full-fledged theory of Indo-European historical morphology in the hands of Franz Bopp (1816, 1833–52), and while many of the particular arguments made at that time no longer hold, it is still true that contemporary theories of grammaticalisation are the intellectual descendants of these ideas.

The latter answer to this question also has a long pedigree. Already the Renaissance scholar Justus Cæsar Scaliger claims (1540) that the earliest forms of language had no morphology at all, and several early modern scholars claimed the same for the earliest, unattested, stages of particular languages (eg Vossius 1635 for Greek). By the eighteenth century theories of monosyllabic primeval languages abound all over Europe and also find their way into the root theory of Schlegel (1808) and early Indo-European linguistics.

A third question, inextricably interwoven with the above two, also emerges if one looks at the development of linguistic thought in the 17th–19th centuries. This is a position rather than a question really: the idea very quickly gained ground in this period that roots are not necessarily attested entities (as they were in the Semitic tradition from which the notion of root comes); they may be highly abstract linguistic units that hardly resemble

any actual form found in the language for which they are claimed. Since there were no methodological worries about positing such roots, these theories soon began to blossom and became a dominant trend on the continent (grammarians such as Philipp Zesen, for instance, in the mid-seventeenth century would derive all words from CV-roots from a set of four C-s and four V-s, see Jellinek 1913–1914).

It is quite clear that Murray was part of an intellectual climate that may be regarded as dominant in his time (regardless of how many 17th–18th-century German grammars he had actually read — we certainly do not know). It is also clear that this is precisely the reason why towards the end of the 19th century his work fell into oblivion. By that time the Neogrammarian approach, which was methodologically very strict, and required phonological systematicity for any etymological claim to hold, became dominant and had no real competition from any other approach. And thus scholars like Murray were relegated to the fringes of history and are by now the objects of antiquarian, rather than linguistic, interest.

REFERENCES

Aarsleff, Hans. 2008. Philosophy of Language. In: Knud Haakonssen (ed.), *The Cambridge History of Eighteenth-Century Philosophy.* Cambridge: Cambridge University Press. 451–495.

Bopp, Franz. 1816. *Über das Conjugationssystem der Sanskritsprache in Vergleich mit jenem der griechischen, lateinischen, persischen und germanischen Sprache.* Frankfurt a. M.: Windischmann.

Bopp, Franz. 1833–52. *Vergleichende Grammatik des Sanskrit, Zend, Griechischen, Lateinischen, Lithauischen, Altslawischen, Gotischen und Deutschen.* Berlin: Dümmler.

Jellinek, Max Hermann. 1913–1914. *Geschichte der neuhochdeutschen Grammatik.* 2 vols. Heidelberg: Winter.

Mäzke, Abraham Gotthelf. 1776. *Grammatische Abhandlungen über die Deutsche Sprache.* Breßlau.

Mäzke, Abraham Gotthelf. 1780. *Über Deutsche WörterFamilien und Rechtschreibung.* Züllichau.

Palsgrave, John. 1530. *L'éclaircissement de la langue françoise.* London.

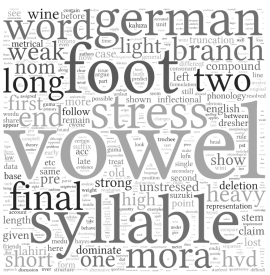
Scaliger, Justus Cæsar. 1540. *De causis linguæ latinæ.* Lyon.

Schlegel, Friedrich von. 1808. *Über die Sprache und Weisheit der Indier.* Heidelberg: Mohr & Zimmer.

Telegdi, Zsigmond. 1967. Struktur und Geschichte: zur Auffassung ihres Verhältnisses in der Sprachwissenschaft. *Acta Linguistica Hungarica* 17 : 223–243.

Vossius, Gerard Johannes. 1635. *De arte grammatica.* Amsterdam.

András Cser
cser.andras@btk.ppke.hu
Pázmány Péter Catholic University
Piliscsaba



The Germanic Foot in Old English Phonology and Morphology

Attila Starčević

This article will look at some Old English (OE) phonological and morphological phenomena using a traditional foot-based approach (Dresher & Lahiri 1991) and concentrate on some of its shortcomings drawing on the evidence of OE compounding. My purpose is not so much to give an account of the data in an alternative theoretical framework than shed light on some of the contentious aspects presented by a foot-based approach.

I focus on the quantitative differences of word-final vowels of OE and how much information we can glean from compounding. With OE being a dead language, it is very difficult to experience the excitement of "hands on" experience with something as elusive as vowel length in unstressed syllables. Luckily, we have ample of written data from manuscripts of all sorts of extraction, as well as etymological considerations, but we have to be aware that vowel length is rarely ever shown, even less so in unstressed syllables. This is not a unique feature of Old English texts. Many modern languages do not mark vowel length in their orthography. With modern languages we have at least the chance of "hearing" a long vowel. How we analyse a long vowel is an altogether different question. Admittedly, with OE this excitement remains, by necessity, restricted to supplying diacritic marks based on some aspect of analysis (especially on top of unstressed vowels that are spelt identically): eg *winĕ* 'friend' vs *heortē* 'heart'. (Parts of this article appeared in Starčević 2009).

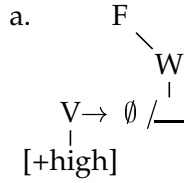
1 The Germanic foot and HVD

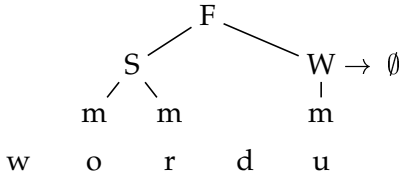
Dresher & Lahiri (1991) devise the notion of the Germanic foot and provide a comprehensive account of a number of OE phenomena, including High Vowel Deletion (HVD) and stress. The Germanic foot, they argue, is an unbalanced moraic trochee and constitutes an additional type in the general

inventory of feet. The Germanic foot and HVD are defined by Dresher & Lahiri (1991 : 255) as shown in (1) and (2) below.

(1) *The Germanic foot*
From left to right, build binary, quantity-sensitive left-headed trees whose left branch contains at least two moras.

(2) *Foot-based HVD*
Delete a high vowel in a weak branch of (the Germanic) F(oot).

a.


b.


With F 'foot', S 'strong', W 'weak' and m 'mora', (2a) shows the original formulation of the foot-based approach to HVD. In other words, a metrically weak high vowel is deleted, as shown in (2b): **wordu*[1] > *word* 'word.NOM/ACC.PL'. Let us see a number of representations in (3), Dresher & Lahiri's (8) and (9).

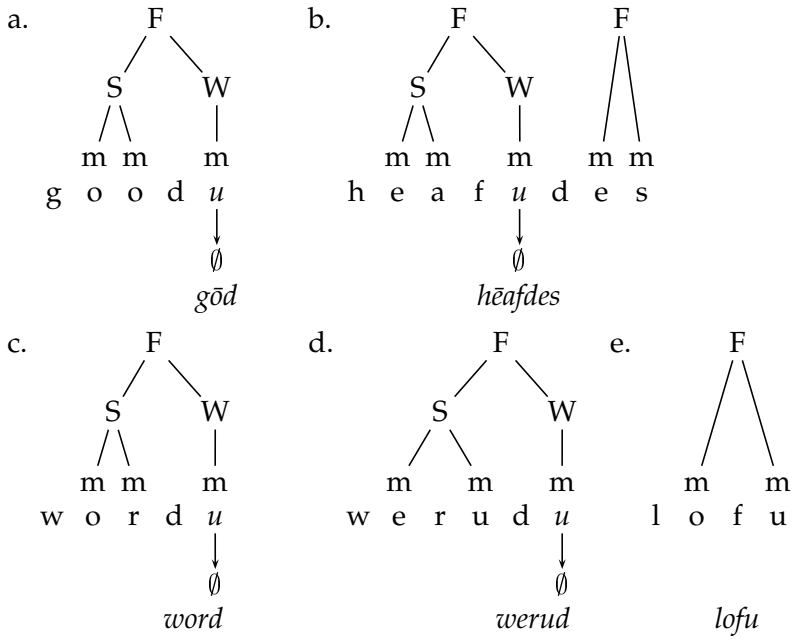
In (3) the representations for *gōd* 'good.NOM/ACC.PL', *hēafdes* 'head.GEN.SG', *word* 'word.NOM/ACC.PL', *werud* 'troop.NOM/ACC.PL' and *lofu* 'praise.NOM/ACC.PL' are given (with italicised **-u*'s showing the effects of HVD in metrically weak positions). Compare (3a) to (3b): in the former, the last syllable is parsed into the weak branch of the Germanic foot, in the latter the last syllable (*-des*), weighing two moras, is positioned in another foot (as it does not branch, it is destressed according to the Final Destressing rule (Dresher & Lahiri 1991 : 260)).

The Germanic foot, the authors claim, satisfactorily answers a number of issues in Germanic phonology:

i. primary stress (the Germanic foot designates the first mora of the root as the strongest in the word)
ii. HVD (a metrically weak high vowel is deleted)
iii. 'resolved syllables' (the equivalence of one heavy syllable to a sequence of a light syllable followed by a light/heavy syllable, ie H = L X, where X = H/L)
iv. secondary stress

[1] Asterisked data (eg **wordu*) show reconstructed forms, those with double asterisks (eg ***werdes*) ungrammatical forms.

(3) *Sample representations showing the Germanic foot*



Given the foot-based approach to HVD, it is no longer necessary to stipulate that the high vowels *-*i* and *-*u* have to be in an open syllable: compare **wordu* > *word* to **wærun* > *wæron* 'be.PST.PL'. In **wordu* the high vowel is in a weak branch of the foot and is deleted; in *wærun* the high vowel occupies a foot in its own right (on account of *-*run* weighing two moras, so it cannot be recruited as the weak branch of the first foot dominating **wæ*-).

The data in (3d), contrasted with (3a) and (3c), show that these structures are metrically equivalent as far as HVD is concerned. So, in order to build the strong branch of a foot, the mora of the next syllable must be recruited to satisfy the minimal two-mora requirement on weight of the strong branch of the foot.

Facts about HVD deletion obviously show that a heavy syllable was treated in the same way as the concatenation of a light plus either a light or a heavy syllable, so in some pre-theoretical sense the resolved foot *does* make sense (H = L X). This ushers in the notion of the "resolved foot" (or "resolved syllable"), a notion much criticised by Minkova & Stockwell (1994). They argue that structures like (3e) cannot be assigned any foot

structure. However, Dresher & Lahiri (1991) do not claim that a foot *must* have a weak branch, so bimoraic and bisyllabic words like *lofu* must be assigned stress (and foot structure) by default, similarly to monosyllabic (and also minimally bimoraic) words like *bæþ* 'bath'.

2 Problematic aspects of the Germanic foot

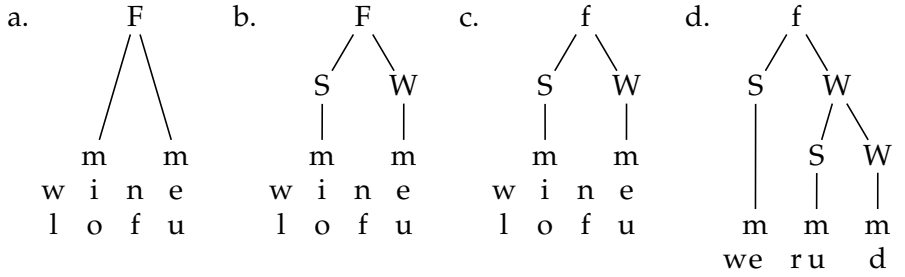
In Dresher & Lahiri's (1991) conception the left branch of the Germanic foot is the "strong" branch of the construction: S could as well stand for 'stressed' and W for 'unstressed'. When the left branch dominates heavy syllables, eg *gō-, hēa-* and *wor-,* the two terms ("strong"/"stressed") are synonymous. However, in case the strong branch dominates two syllables, **werudu* in (3d), the reason for choosing "strong" becomes obvious: "stressed" would imply that two syllables (**weru-*) share the same stress. This is impossible, both theoretically and empirically.

Theoretically, as argued in Minkova & Stockwell (1994) and Scheer & Szigetvári (2005), on different grounds, the stress imposing algorithm can designate one vowel only as stressed.[2] Empirically, given the sound changes in OE, the second vowel of a resolved syllable cannot have been stressed. This is clear from the changes that affected the neuter *a*-stem NOM/ACC.PL **-ō*. The **-ō* in unstressed positions comes down as *-u* in pre-OE and is ultimately dropped in the weak branch of the Germanic foot in OE (**wordō* > **wordu* > *word* vs **skipō* > *scipu* 'ship'), while it remains unchanged in stressed positions (Germanic **dǒmaz* > OE *dōm* 'judgement'). The final vowel of *scip**u*** shows that it can only have been unstressed, otherwise it would be *scip**ō*** (unstressed *ō* appears as *u*). The same applies to **-i,* which appears as *-e* in unstressed syllables (except before the velar nasal), as in the NOM.SG of *i*-stem masculine nouns: *wine* < **wíni* 'friend' (cf *cyning* < **kuning* 'king').

Let us take a closer look at the structure of *wine, lofu* and *werud* and try to ascertain whether "S" can mean anything else than 'stressed' (see (4)).

[2] The difference between Minkova & Stockwell (1994) and Scheer & Szigetvári (2005) is that while for the former the question does not arise which part of a long vowel is stressed (in **gǒdu* the long vowel *ō* is stressed), for the latter (given the basic tenets of CV phonology) either the first or the second CV unit in a long vowel may be stressed (as is demonstrated for Ancient Greek accentuation). In Germanic, given that it is always the first vowel of the stem that receives stress, it must be the case that the same applies to a long vowel, ie it is the first CV unit (the first mora of the long vowel) that is stressed. Even if this were not so, there are no tests showing which CV unit of a long vowel or diphthong receives stress: so the difference between Germanic and OE $\bar{o}_1$ /ˈoo/ and $\bar{o}_2$ /oˈo/ must remain conjectural.

(4) *The Germanic foot and* wine, lofu, werud

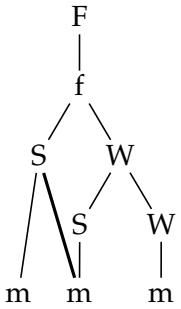


(4a) shows the representation of *wine* and *lofu* in the spirit of Dresher & Lahiri's Germanic Foot. Here there is only one branch — given the formulation of the Germanic foot in (1) —, this can only be the strong branch of the foot (it must weigh at least two moras). Here the second mora comes from the second syllable. As it stands, (4a) can only be the representation of a stressed syllable (and a foot projected from it). This, however, entails that two vowels share the same stress, which is impossible. The problem would go unnoticed in case this single (strong) branch dominated a long vowel or a closed syllable with a short vowel. Imagine we attempt to revise this representation to the one in (4b). Here there is one stressed and one unstressed syllable (the first one is strong when compared to the syllable to its right, which must be weak/unstressed). However, (4b) cannot be the representation of the Germanic foot: the left/strong branch dominates one mora only. Realising this, after the discussion of Gothic data involving Sievers' Law of *j/ij* alternation, Dresher & Lahiri (1991 : 268) tackle the internal structure of the resolved syllable. The resolved syllable shown as *f* has the internal structure shown in (4c). This, again, is problematic because it is not clear at this point what the relationship is between *F* and *f* (obviously *f* is a constituent which is larger than a syllable, but smaller than a foot). In addition, the mystery constituent *f* is still strongly suggestive of shared stress.

In an attempt to save the Germanic foot, the authors suggest the structure shown in (4d), representing, for example, *werud.* This revised resolved constituent *f* fares better in one respect: it shows that stress is placed on one vowel only (the first vowel of the word). Yet, other problems emerge: first, the strong branch no longer dominates a minimum of two moras (as required in the original formulation). Second, the weak branch is now allowed to dominate two moras (again in apparent breach of the original formulation). Third, realising that the first two moras are somehow still the strong moras of the word, the authors employ another *S*, now inside

the weak branch (they claim that it is "frozen" inside the weak branch). This *S* cannot be the same kind of *S* found on the stressed vowel, but their unity is emphasised by the notation (after all, two light syllables behave as a single heavy syllable from the point of view of HVD). The *S* inside *W* can mean a 'strong mora', as opposed to both a 'stressed mora' under *S* and a 'weak mora' (a *W* under *W*), but at this point the internal structure of the Germanic foot becomes incomprehensible. The constituent *f* projects into *F*. The unity of the two *S* nodes, as well as the "complete" Germanic foot should now take the following shape (see (5)).

(5) *The "complete" Germanic foot*

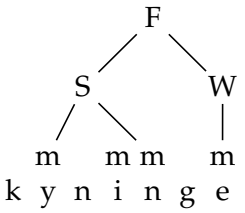


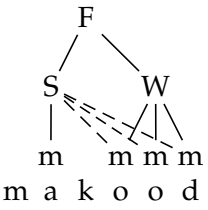
(5) summarises our discussion: *f* can only project into *F*, the Germanic foot. At this point, however, *f* and *F* become indistinguishable. The thick line shows the authors' implicitly entertained idea that the (unstressed) *S* inside the weak branch behaves in tandem with the stressed *S*. This double linking of the weak *S* insures that the left branch of the foot still (somehow) dominates two moras. However, not even this can salvage the weak branch from dominating two moras. In addition, there is still no explanation for why syncope of the weak *S* is not allowed (*werudes*/***werdes* 'troop. GEN.SG'). It is unstressed, so it could be potentially syncopated. The loss of the weak *S* would not impair the Germanic foot: its left branch would still dominate two moras (the second mora now provided by the coda consonant: ***werdes*).[3] All in all, as (5) shows, the Germanic foot can certainly not be what the original formulation intends it to be.

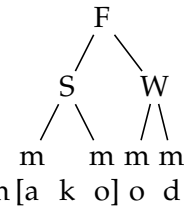
[3] Germanic and, specifically, OE are not languages in which only pronounced vowels are visible for weight phenomena (which underlies the notion of HVD formulated in terms of the Germanic Foot): cf Scheer & Szigetvári (2005, fn. 14) where stress computation in Ancient Greek is claimed to involve pronounced vowels only. Clearly, if OE were like Ancient Greek, both *scipu* and *wordu* would be well-formed (the left branch of the foot would dominate two pronounced vowels in this case).

Disregarding Dresher & Lahiri's emendations to the Germanic foot in the form of the new constituent *f*, another problem is evident in their treatment of the H = L X equation (where X ranges over H and L). H in traditional terms can mean either 'heavy by virtue of having a coda consonant' or 'heavy by containing a long vowel/diphthong'. All of the examples reviewed by Dresher & Lahiri involve the former type of heavy syllables in the weak branch (see (6a) below), but no example is given of a heavy syllable which contains a long vowel/diphthong (see (6b)).

(6) *The Germanic foot and the H = L X equation*

a. 

b. 

c. 

The representation in (6a) shows pre-OE **kyninge* 'king.DAT.SG', (6b) and (6c) that of **makōd* 'make.PST.PTCP'. In (6a) the left/strong branch contains a minimum of two moras (the second vowel is recruited to supply the minimum requirement on moras).

In (6b) two representations are shown, one inside the other: the first (with the solid lines) shows the case when a long vowel is positioned in the weak branch (this is obviously impossible, given the formulation in (1): *S* cannot dominate a single mora). The parallel representation (with the dotted lines) shows the left branch taking all the moras. This is possible, given (1): the *S* node has to dominate at least two moras. As a matter of fact, this is the only grammatical parsing of this string. However, as discussed above, this representation also implicitly contains the notion of 'shared stress' (in this case three vowels would have to share it).

In any case, this is a no-win situation for the Germanic foot: in **mákǒde* it cannot predict either primary stress (the strong branch, in the authors' admission, has to dominate at least two moras to be able to designate the first mora as the strongest one) or secondary (the long vowel should also be included under the strong branch, given that it cannot be in the weak branch, but then it cannot be allocated stress, for which there is indepen-

dent metrical and phonological evidence for early OE).[4] There are phonological arguments in support of a stressed "long o" in **mákŏde.* However, if a short vowel is followed by a syllable which is heavy due to a coda consonant (eg *cyn**in**ge*) secondary stress on the heavy syllable is impossible (***cynìnge*), or at best controversial and amenable to alternative analyses.

The representation in (6c) shows yet a third possibility: the moras of the long vowel are split. The first mora is included in the strong branch of the foot for purposes of primary stress assignment.[5] If this could be proved for OE, in *mácŏde* secondary stress would be placed on the second mora of the long vowel (*mákoòde*). There is, however, no proof for secondary stress on the second mora of a long vowel (***mákoòde*), nor is there proof for the bi-syllabic nature of such "long" vowels (*máko*$*òde*), but there *is* proof for the two moras of a long vowel behaving as a single unit. Put alternatively, if the moras of a (unitary) long vowel could be split, and the Germanic foot allowed to straddle two vowels (over the head of a consonant), the *prediction* is that a v̆cv̄ sequence should *behave as a single unit or at least not allowed to be split by a process.* This is false, however, as shown by OE compounding (discussed below).

As a final remark on the Germanic foot, let us briefly see how it fits into the foot typologies proposed by Hayes (1980, 1985, 1987), Hammond (1984, 1986) and McCarthy & Prince (1986), Kager (2007), etc. OE is clearly a trochaic (head-initial) language (discussed in §4)[6] with primary stress as-

[4] Examples like the one shown in (6b) are not discussed by Dresher & Lahiri (1991) because they obviously hold the view asserted by Suphi (1988 : 189) that long vowels and diphthongs do not occur in inflectional endings (though they are common in derivational suffixes). Although this claim may be true for late OE, it is certainly incorrect for pre-OE and early OE (and there are indications that some of the long vowels, eg past tense/past participle *-o-* in Class II weak verbs, may have been retained in even late OE. In any case, for Dresher & Lahiri (historical) **macōd* is *macŏd* at the synchronic point of their investigation and as such it behaves like *lofŭ.* The authors, however, do not specifically restrict their analysis to late OE. It is supposed to be able to account for OE.

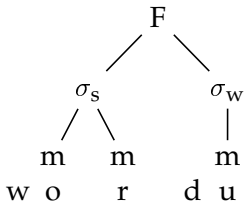
[5] Implicit in the Germanic foot is that primary stress assignment is quantitative, ie only a heavy syllable can be stressed (if the first syllable is light, a second mora is recruited from the following syllable, leading to a resolved syllable). Stress assignment and weight have always been a controversial issue in OE phonology. McCully & Hogg (1990 : 333) say that the first syllable of *gúma* 'man' is assigned stress despite its light status.

[6] Keyser & O'Neil (1985), however, argue for an iambic approach to OE prosody (including HVD). This is an extreme departure from OE (and Germanic) prosody where the overwhelming dominance of the leftmost syllable and the concomitant weakening of all other syllables seem to be beyond reasonable doubt.

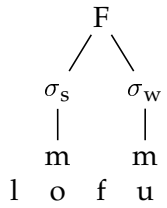
signed to the first vowel of the stem. Trochaic systems are divided into two types. The quantity-insensitive *syllabic trochee* requires two syllables of indiscriminate weight. The quantity-sensitive *moraic trochee* requires two moras: this is satisfied by either a heavy syllable of a sequence of two light syllables. Given the shortcomings of the Germanic foot as far as the issue of 'shared stress' is concerned, let us reformulate the Germanic foot along the lines of a syllabic trochee, so that it is now encompasses a stressed and an unstressed syllable (see (7)).

(7) *The Germanic foot as a quantity-insensitive syllabic trochee*

a.



b.

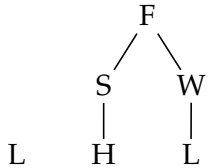


(7a) shows pre-OE **wordu*, (7b) **lofu*. These forms are found in OE as *word* and *lofu*. HVD cannot be formulated along the following lines: "delete a metrically weak (unstressed) vowel in a trochee". This obviously works for (7a), but overgenerates in (7b) (here the weak syllable should also have been lost: ***lof*). There is no general well-formedness constraint ruling out ***lof* (cf *bæþ* 'bath'), so the answer must lie somewhere else.

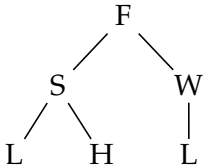
The moraic trochee, on the other hand, would parse sequences with the pattern H L L as [H] [L L] in Cairene Arabic (eg Hayes 1987) with the first L heading a foot and receiving main stress. The Germanic foot, as Dresher & Lahiri (1991 : 271) argue, would parse the same sequence as [H L] [L] with the first L being in the weak branch and subject to loss in case it contains a high vowel. A syllabic pattern L H L is parsed as [L H] [L] in OE, ie it has bounded feet and a light syllable is not skipped over by foot construction as opposed to Khalkha Mongolian in which only heavy syllables can receive stress with the light syllables remaining unfooted and later adjoined to the metrical word (eg Hayes 1980), see (8a) and (8b) below.

(8) *Foot construction in Khalkha Mongolian and OE*

a. Kalkha Mongolian



b. OE



The requirement that the strong branch of the foot have at least two moras is reminiscent of Hayes' (1980) obligatory branching (OB) parameter. The OB parameter, as applied to OE, means in essence that OE stress is quantity based. It also follows from (8b) that a heavy syllable following a light syllable can never be stressed (***mácðde*).

Dresher & Lahiri (1991 : 272–279), essentially, develop the idea of the augmented (extended) moraic trochee whose left branch has to contain at least two moras and the right only a single mora. This leads to an "uneven" trochee.[7] All in all, the problems presented by the analysis warrant a new discussion of some of the data that it draws on.

3 OE compounding

For our purposes, compounding will be taken informally to involve A and B to yield AB. Before a rule is attempted, some examples are supplied in (9). Truncation is shown as "✂".

(9) *Examples for OE compounding*
- a. consonant final
  - *cyning* 'king' + *gereord* 'banquet' = *cyninggereord*
  - *hæsel* 'hazel' + *hnutu* 'nut' = *hæselhnutu*
  - *lēoht* 'light' + *bære* 'bearing' = *lēohtbære* 'luminous'
- b. vowel final
  - i. monosyllabic: *cū* 'cow' + *horn* 'horn' = *cūhorn*
  - ii. multisyllabic
    - A. ending in *-i*: not applicable, unstressed **-i*, if not deleted, appears as *-e* in recorded OE, *-i* in very early OE
    - B. ending in *-e*: *-e* (sometimes) lost
      - I. light syllable before final vowel
        - *wine* 'friend' (< **wini*) + *drihten* 'lord' = ***winedrihten*** 'friendly lord'
        - *cyrice* 'church' + *gang* 'going' = *cyric✂gang*
        - *cwene* 'female' + *fugol* 'bird' = *cwen✂fugol*
      - II. heavy syllable before final vowel
        - *ende* 'end' + *lāf* 'remnant' = ***endelāf*** 'last remnant'
        - *wīte* 'punishment' + *þēow* 'slave' = ***wīteþēow*** 'slavery as punishment'
        - *āge* 'eye' + *wund* 'wound' = *āg✂wund*

[7] Kager (2007 : 205f) discusses alternative (sometimes aberrant) foot types, one of which is the Germanic Foot.

C. ending in *-a*: *-a* truncated
   I. light syllable before final vowel
   guma 'man' + *stōl* 'chair' = *gum*≻≺*stōl* 'throne'
   II. heavy syllable before final vowel
   *steorr**a*** 'star' + *glēaw* 'clever' = *steor(r)*≻≺*glēaw* 'clever at astronomy'
   *scucc**a*** 'devil' + *gyld* 'service' = *scucc*≻≺*gyld* 'idolatry'
D. ending in *-u* (with *-o* as an allograph of *-u*)
   I. light syllable before final vowel: *-u* not truncated
   *med**u*** 'mead/beer' + *wērig* 'weary' = *med**uwērig*** 'drunk'
   II. heavy syllable before final vowel: not applicable, *-u* deleted due to HVD, although it does appear in the plural of some neuter nouns: *wītu* 'punishments'; the plural form, however, is impossible as first part of compound

There are three vowels that can appear in word-final position: the high vowel ⟨u/o⟩ (most probably /u/), a mid vowel ⟨e⟩ (generally assumed to be /ə/, at least in late OE) and a low vowel ⟨a⟩ (/ɑ/). A generalisation on truncation is difficult is reach. One cannot say that truncation happens along the division line of consonants and vowels, nor can one say that truncation happens on the basis of vowel quality: the mid vowel ⟨e⟩ is split along lines that are difficult to grasp. Syllable weight is of no help either: *-e* is preserved after both light (*win**e**drihten*) and heavy syllables (*end**e**lāf*), but may also be lost (*cwenfugol, ēagwund*). The vowel *-a* is lost regardless of the weight of the preceding syllable. The vowel *-u,* however, is only found after light syllables in the first part of compounds. If we accept Suphi's (1988) supposition that there was no quantitative distinction of vowels in inflectional endings (*ende, cwene*), no generalisation is possible either.

We may take the etymological (pre-OE) length of word-final inflectional vowels into consideration: **endī, *kwenō(n), *gumā,* etc. We might say that long vowels are always preserved in OE (*ende, cwene, guma*) and truncated in compounding. This does not explain *ende,* which escapes truncation in compounding. What is more, if we suppose on the basis of OE that long vowels survive into OE, we are forced to conclude that *wini* and *medu* had long final vowels (**winī, *medū*), but this is incorrect etymologically (***winī, **medū*). These words had short vowels in pre-OE: **wini, *medu.* Of course, one may hasten to add that it is equally possible that there was a change that lengthened word-final short high vowels at some point in pre-OE (**wini* > **winī, *medu* > **medū, *wordō* > **wordo* > **wordu* > **wordū*), which prevented HVD. Such long vowels (given that they weigh

two moras) would be placed in the strong branch of the Germanic Foot. This is possible, but it dodges at least two technical questions: (i) the first/strong foot of **winī* containing the short vowel should be impossible according to the Germanic Foot (it must be heavier than a single mora according to the original formulation) and (ii) it dodges the question of why such long high vowels were lost after heavy syllables (?**wordū* > *word*), but not after light syllables (?**winī* > *wine*). This latter problem shows that some weak heavy feet were lost (?**wordū* > *word*), some not (?**winī* > *wine*). The problems in (i) and (ii) are entwined.

What is more, the Germanic Foot predicts that *guma, wine, cwene, medu* should behave in the same way (as opposed to *ende, ēage, steorra, wīte*). Recall: the Germanic Foot treats *guma, wine, cwene, medu,* etc as a constituent. At least two moras are needed for the strong (left) branch of the foot. These moras can be recruited from two consecutive vowels straddling a singleton consonant (*guma, wine,* etc). The Germanic Foot predicts that *guma* and *wine* should behave identically (neither should lose its final vowel in compounding). What is more, the account also predicts that, once a word-final vowel should be lost in a process, the final vowel in *ende, wīte,* etc should be more prone to lose their vowels vis-à-vis the line of demarcation predicted by the Germanic Foot (the foot that would remain after truncation of the weak branch of the foot is heavy: *end-, wīt-*).

The counterargument may be that the Germanic Foot was set up to account for a phonological phenomenon, and thus compounding falls outside its scope. This is true, but using a generalisation at more than one point in one's analysis makes that generalisation more appealing. Compounding obviously cannot be explained drawing on the insights of the Germanic Foot.

4 Some possible explanations

Bliss (1967 : §37, app. §4), Kuryłowicz (1948/1949, 1970) and Suzuki (1996) note that morphological identity among the words involved in alternations sensitive to HVD may have given rise to the equivalence between morphologically comparable words with and without an overt ending, eg *hof* 'enclosure' = *word, gifu* 'gift' = *gūð* 'combat'. Suzuki (1996) claims that **i*/**u* were reanalysed as part of the stem, rather than a suffix, as they originally were: eg *wine* < **win-i* 'friend', rather than *win-e* and, similarly, *gif-u* (< **gif-ō*), reanalysed as *gifu.* The equation H = L X (where X ranges over a H or a L syllable) is known as *resolution.* Resolution is claimed to exist in OE poetry, but its presence in phonology is more contentious (see discussion on "shared" stress above). He gives some support for this interpretation:

i. long stems are generally more prone to adopt analogical suffixation with *a*-stems NOM/ACC.PL suffix *-as* (*feldas* 'fields', instead of the historically expected *felda*) is encountered more often in late OE than *sunas* 'sons', from *suna*),

ii. **i*/**u* are inseparable from the base word in compounding (eg *winedrihten* 'friendly lord' ('chum-lord' < **wini*), *wudu-rēc* 'wood smoke' < **wudu*), as opposed to those vowels that are historically long (*gumcyst* 'manly virtue', from **gumā* 'man' < **gumô*, with *ô* showing a trimoric or 'super long' Germanic vowel). These data cited by Suzuki (1996 : 304) support his claim that the high vowels, due to their inherent acoustic weakness, are less prone to be left unresolved (ie the sequence CVCi or CVCu is treated as a single unit).

Suzuki's claim may have been applicable to pre-OE when the vowel of *wine* was still a high vowel (**wini*), but it is difficult to see how this was to play out in recorded OE, by which time the vowel ⟨e⟩ was probably reduced to /ə/ (Hogg 1992). The data show that words ending in ⟨e⟩ are treated differently (compare *cwene* to *wine,* of which only the first one is truncated when compounded). It may be argued that compounds involving *cwene, wine, medu*, etc became lexicalised at some point, but the process seems too regular. Perhaps the claim that all inflectional suffixes had been shortened by recorded OE is too hasty. Let us look at the conditions under which word-final vowels survive into OE.

5 Word final vowels in Old English

Here a synchronic account will have to be made on the basis of inferred diachronic data. I will tackle some of the major points. Fulk (1992) follows Kaluza's (1896) insight in viewing short vowels as descending from proto-Germanic plain vowels, and the long ones as those of the circumflected ones (traditionally called trimoraic):[8] eg *-e* (< **ôz*) FEM.ACC.PL, *-a* (< **ô*) MASC.NOM.SG, etc.

Fulk (2002 : 336) adds another category to the "long endings": all inflections ending in a consonant. Bliss (1967) and, more recently, Suzuki (1995, 1996) classify long vowels as those that remain after heavy syllables by OE times. Consequently, all of those vowels that are lost after

[8] Kaluza (1906 : §73 (h)) claims that original Germanic stressed circumflected (G. *schleifend*) trimoraic vowels changed to stressed bimoraic vowels with a so-called normal intonation (G. *gestoßen*) in OE. Although Kaluza makes no difference at this point between primary and secondary stress, these vowels must be secondary stressed (they all occur in inflectional endings).

heavy syllables are short. This may leave a synchronic alternation between *-e* (< **i*)/*-u* (eg in NOM.SG) and zero: eg *win**e*** 'friend' vs *wyrm* 'serpent' (*i*-stem nouns), *sun**u*** 'son' vs *hand* 'hand' (*u*-stem nouns), etc. In some cases, however, the phonological shape of the vowel that appears after both heavy and light syllables is the same as the one that still alternates with zero in a given paradigm (eg *win**e*** NOM.SG vs *wyrm* < **wyrmi* NOM.SG vs *win**e***/*wyrm**e*** DAT.SG). Suzuki (1996 : 286) treats the dative singular ending *-e* (found in a certain class of nouns) as long because it usually appears as unresolved (that is, it is not treated as a single unit with a preceding short vowel), known as Kaluza's Law.

As can be seen, both accounts are synchronically opaque: *-e* (< **i*) NOM.SG is phonologically indistinguishable from *-e* (< **ai*) DAT.SG. Fulk's and Kaluza's system of long vowels is not coextensive with that postulated by Bliss and Suzuki (a more in-depth analysis will not be attempted here), but all analyses agree that Kaluza's Law worked at a very early stage of OE when there still existed a quantitative distinction between unstressed vowels in inflectional endings. Suzuki (1996 : 285), similarly to Bliss (1967 : §5 in app. B) and many others, argues that the short vowels that Kaluza's Law makes use of in resolution all go back to pre-OE **i* and **u*, which were subject to HVD based on the weight of the preceding syllable.

The question that arises naturally with the deletion of short vowels is why only the high vowels were affected. A solution usually offered (also by Suzuki 1996 : 305) is that the distinction between the high vowels and the rest of the vowels rest on a minimal degree of sonority in pre-OE **i* and **u*, as opposed to the rest of the vowels. Although a more substantial analysis is impossible here, the reason for the deletion of the two high vowels is simply due to a diachronic coincidence: at the point when HVD operated, these two vowels were the only short word-final vowels. There were other short vowels, but these were not word-final (eg *beran*/*rīdan* 'to bear/ride' < **beranam*/**reidanam*, *boren*/*riden* 'born/ridden' < **boranaz*/**ridanaz*, Campbell 1959 : §333f).

The deletion of the Germanic vowels in word-final position is not invariably linked to sonority. This is supported by the deletion of **-a*, **-o*, **-e* and **-i* in absolute finality in Germanic (Campbell 1959 : §331): OE *wāt* 'I know' < **waita*, *-es* 'GEN.SG' < **-æs* < **-asa* < Indo-European **-oso* (of certain nominal classes), OE *bæþ* < **baþam* 'bath.NOM/ACC.SG', *stān* < **stainaz* 'stone.NOM.SG';[9] *ber* 'carry.2SG.IMP' < **bere*; *guman* 'man.DAT.SG' < **gumani*, *guman* < **gumaniz* id. 'GEN.SG' (following the general loss of Indo-

[9] Campbell gives **-a* and **-o* as two separate vowels, although, from a Germanic perspective, they are the same, as **a* and **o* merged in Germanic **a*.

European word-final consonants in Germanic), etc. There are no clear cases of **-u* that were lost this way.[10]

As a matter of fact, it is the high vowels that are most resistant to deletion from a diachronic perspective. In connection with *guman* < **gumani*, Campbell (1959 : §331 (3)) remarks that **-i* was only lost when two or more syllables preceded it (and this loss must have occurred before *i*-mutation). When it was the second vowel in a word following a light syllable, it remains in OE (and surfaces as *-e*). Campbell is not explicit on the issue, but the same applies to **-u.* This is supported by the OE forms for the *i-* and *u*-stem nouns: OE *wine* < **wini* < **winiz, sunu* < **sunuz.* The rest of the Germanic short vowels (eg OE *bæþ* < **baþa* < **baþam, ber* < **bere,* etc) could not be saved from deletion, even if they followed a light syllable.

Later sound changes brought about the shortening of the word-final long vowels. The long vowels that were saved from deletion are **-ō* and **-ī*: eg *scipu* < **skipō* 'ship.NOM/ACC.PL', *scyle* < **scylī* 'shall.PST.SBJV', *dǣde* < *dǣdi* id. 'NOM.PL' (early OE) < **dǣdī.*

The long vowels (after shortening and possibly rising in the case of the back vowel) could only be saved from deletion if they were preceded by a light syllable. If not, they were lost: *word* < **wordu* < **wordo* < **wordō, bend* < *bendu* < **bendju* (after syncopation) < **bendiju* < **bendijō* (by Sievers' Law) < **bandjō.* The rest of the pre-OE vowels at the time of HVD were long (most probably only long monophthongs survive by this time) and thus undeletable, see (10).

(10) offers some examples for pre-OE word-final short vowels that survive if they were preceded by a light syllable; if not, they are deleted (compare (10a) and (10b) to (10h) and (10i)). In case the word-final vowel was long, it was retained. The chronology of the shortening and monophthongsation processes of the various vowels cannot be undertaken here but Campbell (1959: ch. VII) offers a comprehensive summary. All in all, it seems that vowel deletion after certain contexts is formulated as HVD because the only two eligible word-final short vowels at the time of the activation of HVD were **i* and **u.* This is a diachronic coincidence. We have

[10] Campbell (1959 : §331 (4)) is not entirely explicit on the issue when the thematic vowel **-a* of the *a*-stem nouns like *bæþ* 'bath' and *dæg* 'day' was lost. He claims that **-a* was retained as a connecting vowel in compounds, based on Old High German *alamahtig* 'almighty' and *tagalīh* 'daily' (compare this to OE *ælmihtig* and *dæglic*). If this is correct, then compounds provided a protective environment, and the thematic vowel, as far as OE is concerned, was lost in two waves: first, word-finally (and thus already in West Germanic) and, later, in "reinterpreted" (newly formed) compounds (in pre-OE).

(10) *Retention/deletion of vowels*

	pre-OE	(early) recorded OE
a.	*skip***u**	scip***u*** 'ships-NOM/ACC-PL'
b.	*win***i**	win***e*** 'friend-NOM-SG'
c.	*dǣd***ī**	dǣd***i*** > dǣd***e*** 'deed-NOM-PL'
d.	*end***ī** (?**endij*)	end***i*** > end***e*** 'end-NOM-SG'
e.	*fremid***ǣ**	fremed***e*** 'save-1SG-PST-IND'
f.	*skip***ǣ**	scip***æ*** > scip***e*** 'ship-DAT-SG'
g.	*gum***ā**	gum***a*** 'man-NOM-SG'
h.	*lār***u**	lār 'learning-NOM-SG'
i.	*tēþ***i**	tēþ 'tooth-NOM-PL'

now looked at what etymology can tell us about word-final vowels. Let us now see what compounding can tell us about vowel-final words.

6 Old English compounding and vowel length

Etymological length of vowels is one side of the issue. The other is what morphology can tell us about vowel length. We have seen that truncation cannot proceed either along the etymological structure of words into stem + inflectional ending (compare *win-e,* which never undergoes truncation, to *heort-e,* which always does, cf (10)) or the quality of vowels, as far as quality can be judged with regards to spelling (compare again *win**e*** to *heort**e***).

There is one remaining avenue open for us: distinctive vowel length in inflectional vowels. All inflectional vowels are unstressed. Distinctive vowel length in unstressed syllables has generally been assumed for derivational suffixes only (eg *mán(n)hād* 'manhood-NOM.SG'), even for late OE. It is also assumed that long-vowelled syllables of derivational suffixes can be secondary (or possibly tertiary) stressed if followed by a vowel (eg *mán(n)hădes* GEN.SG).

A slightly different scenario is assumed for inflectional suffixes (at least for late OE). A historically long-vowelled suffix is assumed to have a short vowel, exemplified here with the formative vowel of the second class of past tense/participle forms (e.g, *lŏcŏd* 'lock.PST.PTCP', historically **lōc-ō-d*) unless followed by a vowel, in which case the etymological length comes back with secondary/tertiary stress (*lŏcŏde* 'look.1/3SG.PST.IND'). Whereas there *is* proof for secondary/tertiary stress (but not necessarily vowel length) in *lŏcŏde* from poetry and non-metrical phonology, there is

no convincing proof for the short vowel in *lŏcŏd* (barring the general assumption that unstressed inflectional endings show the general tendency of loss of distinctive length).

Word-final inflectional vowels are difficult to test for length or stress. A final inflectional vowel, in, eg *heort-e,* is always final, no other vowel can follow it (eg ***héortēa*). This is how the length of such vowels can remain obscure. It seems, however, that morphology can be of help here: morphology was sensitive to length differences that remained hidden by spelling or impenetrable to phonological tests. Let us formulate our rule for OE compounding in (11).

(11) *OE compounding*

Take A and B,

a. if A ends in a consonant, put A and B together
b. if A ends in a vowel,
    i. truncate the final vowel of A if it is long, put A and B together
    ii. if the final vowel of A is short, put A and B together

If we accept (11) and work backwards, as it were, we can now supply the missing disambiguating length marks on the final vowels of the examples in (9), see (12).

(12) *Word-final (unstressed) inflectional vowels*

winĕ
medŭ
cyricē
cwenē
ēagē
gumā
steorrā
scuccā

The disambiguated vowels in (12) only show reconstructed quantity, but tell us nothing about quality. This reconstruction is probably true for classical or at least non-late OE. If we go by the spelling, it seems that in word-final position in this period there is no short or long ⟨i⟩, no long ⟨u⟩ for the high vowels, only long ⟨a⟩ exists for the low vowels and both long and short ⟨e⟩ for the (presumably) front (and/or central) mid region. It is equally possible that short ⟨u⟩ was actually a short ⟨o⟩ (with ⟨o⟩ usually being treated an as allograph of ⟨u⟩). This in turn means that there were no unstressed high vowels in word final position in inflectional endings.

Note, however, that there is one more surprise at the end of vowel-final words: *ende* does not undergo truncation (*endelēaf*), contrary to our expectations (***endlēaf*). Let us look at some etymological considerations. The word belongs to *ja*-stem nouns: **andjas* > **andijas* (through Sievers' Law: **j* is found as **ij* after heavy syllables). The **i* was responsible for umlaut (**a* > *e*). There is some controversy over what the pre-OE form of the word was (eg Campbell 1959, Hogg 1992): **andij* or **andī.* What is certain is that it cannot have been **andi* (**endi* after umlaut) because word-final **i* would have been deleted by HVD (***end*). We can also say for certain that it cannot have been **andī* (at least not at the time of umlaut) because long **ī* does not cause umlaut. Still, **ij* may have undergone monophthongisation to **ī after* umlaut: **andij* > **endij* > **endī.* We must, however, discard the possibility of **endij* surviving into OE. One piece of evidence comes from spelling: *endij* is expected to have been spelt *endiġ*. The other is phonological: in OE there was no general monophthongisation of *ij* ⟨iġ⟩ to a vowel spelt ⟨e⟩ (eg *īfiġ* 'ivy', ***īfe*). We must conclude therefore that *ende* must have been **endij*: (i) the high front vowel was short and thus capable of causing umlaut, (ii) it was not lost to HVD because it was not word-final, (iii) **ij* must have undergone monophthongisation to **ī* before the first written evidence appears and (iv) **ī* must have undergone shortening to **i* (*ende* is found with word-final ⟨i⟩ in very early manuscripts: *endi*), which later changed to a vowel spelt ⟨e⟩ in classical OE. The shortening of **ī* to **i* and HVD were in a counter-bleeding relationship (the shortening comes too late, as it were, for *endi* to undergo HVD). Compounding treats *ende* identically to *wine* and *medu*. All this evidence triangulates pre-OE **endij*/**endī* as OE *endĕ.* We can now augment (12), shown in (13).

(13) *Word-final (unstressed) inflectional vowels*
winĕ
medŭ
cyricē
cwenē
ēagē
endĕ
gumā
steorrā
scuccā

This gives us the following word-final unstressed vowels for OE: *ŭ* (or *ŏ*), *ĕ, ē* and *ā.* We must reject Suphi's (1988) claim that there was no quantitative distinction in inflectional vowels. Phonology and morphology

treat them differently, so they must be different. The quality of the vowels shown as ⟨e⟩ must remain conjectural.

7 Conclusion

If a compound is informally taken as involving the concatenation of two words, A and B, to yield AB, the A part of AB undergoes truncation before the final vowel if this vowel is long (eg *gum-* from *gumā*, *heort-* from *heortē*). If the final vowel is short, there is no truncation of the final vowel (eg *winĕ*, *wudŭ*, *endĕ*). Remaining within a foot-based approach, this shows that while mora sharing between two short vowels over the head of a single consonant is possible (*winĕ*), mora sharing between a short and a long vowel is impossible (***gumā*), in violation of the predictions made by the Germanic Foot. The Germanic Foot predicts that for resolution (H = L X) X can be either light or heavy. The heaviness of the syllable shown as *X* can be due to a coda consonant (eg *hæsel*) or a long vowel (eg *gumā*). This seems to be hasty. The long vowels should be taken out of the equation (at least for non-late OE). We have also been able to disambiguate word-final inflectional vowels from the point of view of quantity.

REFERENCES

Bliss, Alan Joseph. 1967. *The Metre of Beowulf* (2nd ed.). Oxford: Basil Blackwell.

Campbell, Alistair. 1959. *Old English grammar.* Oxford: Clarendon Press.

Dresher Bezalel Elan and Aditi Lahiri. 1991. The Germanic Foot: metrical coherence in Old English. *Linguistic Inquiry* 22 : 251–286.

Fulk, Robert Dennis. 1992. *The history of Old English meter.* Philadelphia: University of Pennsylvania Press.

Fulk, Robert Dennis. 2002. Early Middle English evidence for Old English meter: resolution in Poema Morale. *Journal of Germanic Linguistics* 14 : 331–355.

Hammond, Michael. 1984. Constraining metrical theory: a modular theory of rhythm and destressing. PhD dissertation, UCLA, Los Angeles.

Hammond, Michael. 1986. The obligatory-branching parameter in metrical theory. *Natural Language and Linguistic Theory* 4 : 185–228.

Hayes, Bruce. 1987. A revised parametric metrical theory. *Proceedings of the North Eastern Linguistics Society 17, vol. 1, Graduate Linguistic Student Association.* Amherst: University of Massachusetts.

Hayes, Bruce. 1980. A metrical theory of stress rules. PhD dissertation. Cambridge, Mass: The MIT Press.

Hayes, Bruce. 1985. Iambic and trochaic rhythm in stress rules. *Proceedings of the Berkeley Linguistics Society* 11: 429–446.

Hogg, Richard Milne. 1992. *A Grammar of Old English (Volume 1: Phonology).* Oxford: Blackwell.

Kager, René. 2007. Feet and metrical stress. In: Paul de Lacy (ed.). *The Cambridge handbook of phonology.* Cambridge: Cambridge University Press. 195–228.

Kaluza, Max. 1896. Zur Betonungs- und Verslehre des Altenglischen. *Festschrift zum siebzigsten Geburtstage Oskar Schade.* Königsberg: Hartung. 101–134.

Kaluza, Max. 1906. *Historische Grammatik der englischen Sprache, 1. Teil.* Berlin-Schöneberg: Verlag von Emil Felber.

Keyser, Samuel J. and Wayne O'Neil. 1985. *Rule generalization and opacity in language change.* Dordrecht: Foris.

Kuryłowicz, Jerzy. 1948/1949. Latin and Germanic metre. *English and Germanic Studies* 2 : 34–38.

Kuryłowicz, Jerzy. 1949. La nature des proces dits 'analogique'. *Acta Linguistica* 5 : 15–37.

Kuryłowicz, Jerzy. 1970. Die sprachlichen Grundlagen der altgermanischen Metrik. *Innsbrucker Beiträge zur Sprachwissenschaft, Vorträge, Band 1.* 1–23.

McCarthy, John J. and Alan Prince. 1986. *Prosodic Morphology* Ms, University of Massachusetts and Brandeis University.

McCully, Chris B. and Richard Milne Hogg. 1990. An account of Old English stress. *Journal of Linguistics* 26 : 315–339.

Minkova, Donka and Robert Peter Stockwell. 1994. Syllable weight, prosody, and meter in Old English. *Diachronica* XI/1 : 35–64.

Scheer, Tobias and Péter Szigetvári. 2005. Unified representation for stress and the syllable. *Phonology* 22 : 37–75.

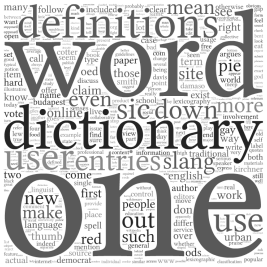
Starčević, Attila. 2009. Middle English Quantitative Changes. PhD Dissertation, Eötvös Loránd University, Budapest.

Suphi, Menekse. 1988. Old English stress assignment. *Lingua* 75 : 171–202.

Suzuki, Seiichi. 1995. In defense of resolution as a metrical principle in the meter of Beowulf. *English Studies* 76: 20–33.

Suzuki, Seiichi. 1996. Preference conditions for resolution in the meter of Beowulf: Kaluza's Law reconsidered. *Modern Philology* 93 : 281–306.

Attila Starčević
starcevic.attila@btk.elte.hu
Eötvös Loránd University
Budapest



About a dictionary that isn't one

Péter A. Lázár

This paper is about the Urban Dictionary (UD), sometimes classed as an online slang dictionary, and generally acknowledged to be a bottom-up attempt at meaning-making. I argue that it is so unorthodox as far as dictionaries go that it is best seen as something else, not necessarily inferior to, but certainly not on a par with, a dictionary.

This claim is guaranteed to incur the anger of those who think that meaning-making (whose exact nature is not satisfactorily clarified in work praising or criticizing UD) should be some kind of democratic, bottom-up, user-generated (user-controlled, or otherwise user-involvement) as opposed to professional activity. It goes without saying that anyone with a mindset like that will be all the more convinced if they have no familiarity with dictionaries, never mind their principles.

The paper (i) argues, briefly, why it is impossible and also probably unnecessary to classify UD as a *slang* dictionary;[1] (ii) illustrates, very briefly, the joys of UD for the user at large and its potential use to the professional; (iii) argues that the standard slogans of collaborative meaning-making mean little, if anything, and are probably just exercises in lip service to some imagined democratic lexicography of doubtful desirability. *Professional* (as opposed to user-generated) should not be a taboo word in this enterprise. UD convincingly shows that the products of this kind of *pluralistic* authorship, while they may make fun reading, be insightful, and even prove valuable sources of information to the expert, are not worthy of the dictionary name. UD may surely be commended as a joyful toy for

[1] Wikipedia, the primary source for the average person wanting to find about UD outside of its own site, explicitly categorizes UD as a slang dictionary.

the average native speaker and a useful one for the language expert, even if does not have its niche under the *dictionary* label.[2]

1 Slang? Dictionary?

UD, an online dictionary (OD) at www.urbandictionary.com with almost seven million entries is widely hailed as a new kind of dictionary — together with a good many similar ones in cyberspace — which can be updated every day, has no size limits and, more importantly by wide consensus, is *user-driven.* The era of the trusted paper dictionary, along with what goes by the name *treebook,* is supposedly over; the old reference works may still be valuable, but for tracking the dynamic changes that languages continually undergo, they are too slow. Not only that: the entry criteria of these "venerable tomes" are often too strict, and even dictionaries of slang sometimes require a word to be in use for a decade or so before it is included (Giles 2008). Cyberspace, which, in addition, offers most of this free of charge, now plugs this gap, and UD is seen as pioneering this trend.

I look at a small portion of that gap, noting that there is no consensus on what exactly the good news is that UD brings: the more sanguine critics of traditional lexicography *politicize* the issue claiming that it is not democratic enough, and bottom-up ventures such as UD take back language from "people wield[ing] language in service of classification systems and power relations" (Kirchner 2009 : 1). The more moderate appraisers are content to note the technological aspect that the online mode offers.

I also look at how the gap is claimed to be stopped by UD, and what it actually delivers to achieve these aims. Fortunately, to be clear about what that gap is and how cyberspace in general, and UD in particular, stops it, the notion of slang need not be clearly defined. UD is doubtless a repository of slang *too,* or at least slang and unconventional language[3] (with a lot of conventional material, not at all clearly delimited).

Urban is a good term that leaves open the issue of the type of UD: slang dictionary or not? Several sources, journalistic and more academic,

[2] To avoid cluttering the exposition, the more bulky examples from UD will be placed in a separate *Illustrative Materials* section at the end.

[3] Originally published in 1937, Partridge's title of his slang dictionary (a more recent edition being, eg Paul Beale and Eric Partridge, New York: Macmillan, 1984) is probably a good attempt at a concise wording: *A dictionary of slang and unconventional English.* (True, its subtitle *colloquialisms and catch-phrases, solecisms and catachreses, nicknames, and vulgarisms* is nowhere so economical.)

agree that it is one. It can, of course, always be argued to be one exactly because of the notoriously undefinable nature of slang, in the first place.

UD itself has 35 entries for slang. To wit, these 35 entries are not (although they are called that in many sources, they probably do not pretend to be),[4] *definitions*—but whatever their wording and clumsy style, they still suggest how diverse these absolutely lay notions[5] for slang may be.

Thorne (2007: v) mentions several "definitions" of slang from UD. He writes:

> Ask users of slang for a definition and they might come up with: 'jargon, used playfully to prevent outsiders from intercepting the actual meaning'; 'the ever-evolving bastardisation of the written and spoken language as a result of social and cultural idolization [sic] of uneducated, unintelligable [sic] celebrities' and 'cool words, words that match the style.

Also, he provides a really minimalist "definition" coming from a teenager he interviewed: 'our language'.

Whichever end of the spectrum one goes to, it is possible to have a definition of slang that UD nicely covers. The closer to the informal end of the scale, the looser the "definition" one opts for, the easier the match becomes. The term apparently sticks: UD is widely acclaimed to be a *slang* dictionary even if its title does not say so.

Lew's (2011) discussion of UD in his analysis of English ODs does not mention slang. It does offer a slang example from UD, **bootyism,** and quotes its No 6 "definition" (which has 8 up and 5 down thumbs)[6] but it

[4] In the case of such a hugely collaborative project it is impossible to tell whether the no doubt heterogeneous contributors know, to begin with, how (*explanatory*) definition should be different from "meaning-making" (a favourite expression of the writings promoting UD as democratic).

[5] No 29 is as follows: "stupid abbreviations which sound like they've got nothing to do with the word. the most annoying is the sort spoken by teenage, black chavs speak so fast you can't understand a word (you're probably not supposed to) and they might as well be MCing. *babe, you betta hav me sum booty on ya or u ain't cummin' 2 town wit me. translation = sweet girlfriend, you had better have brought some money with you, otherwise you can't come to town with me.*" (Incidentally, there is not one single real abbreviation in this pet hate of the contributor's, if we don't want to label *u* and *2* as abbreviations.

[6] The up and down thumbs are supposed to have an important function; more about these later.

seems to consider UD as a general (as opposed to special-purpose, such as slang) dictionary, along with Wiktionary and Wordnik.

2 Online dictionaries

There is no doubt that when it comes to speed of updating, ODs are usually far superior to any other medium. Generally, online works (and any electronic product) also provide faster and easier access/lookup[7] than the static print medium. If you want to hunt for newly minted words, slang or otherwise, colloquialisms or any item that you suspect will not yet be in paper dictionaries, they are just the repository to turn to. The question is whether ODs in general have features that seriously detract from their merits; also, in the particular case of user-controlled ones like UD, whether the drawbacks far outweigh the advantages. This cannot be hoped to be answered for the whole gamut of English ODs, collaborative/user-driven or otherwise, but UD will be scrutinized.

The two most similar ones to UD, often mentioned together, are Wordnik and Wiktionary (the latter often claimed to be multilingual, but in reality an English dictionary). Wordnik, which combines user-generated, collaborative content with a professional "core", does not encourage unbounded, unedited, uncontrolled, unguided user participation.

Wiktionary, by contrast, has been found to contain items with radically different treatments, lack internal consistency, and contradict the Wiktionary guidelines (Fuertes-Olivera 2009 : 107–130). If these hold for Wiktionary, then they are even more relevant in the case of UD.

UD welcomes you with a much-praised lively but uncluttered interface which, however, boasts so many features that it ought to be obvious that it is much more than a dictionary. You will not be disappointed: the dictionary part is complemented by many other features that come with a typical dictionary site. That it is *much less* than one, will not, alas, become apparent for another few minutes, but then it does, with a vengeance, to anyone with a nodding acquaintance with dictionaries (general or slang, paper or otherwise).

[7] There are exceptions. Lew argues that this technological potential is not always properly utilized, especially when the online work is retrospectively digitalized (2011 : 9). One example of a (traditional, ie professional) OD with paper-like access is American Heritage, with no search facility at all; worse still is Dorland's Medical Dictionary [. . .], where access is even slower and more cumbersome than in a printed book (2011 : 9).

3 UD classified as a dictionary

Setting aside for the moment the scepticism regarding UD as a *dictionary*, let us see how it would be treated within *that* category. The classification of Landau (2001 : 7–42) for traditional paper dictionaries[8] will be used as a starting point (a)–(j), and those offered by Lew (2011) for ODs will be added (k)–(m) in the following subsection.

UD, then, is (a) monolingual,[9] (b) world English, (c) native speaker, (d) alphabetical, (e) semasiological, (f) adults', (g) synchronic, (h) unabridged, (i) general-I,[10] (j) general-II.[11]

UD is a new and relatively untried lexicographic venture, itself in constant change (cf "A single description of UD is complicated by its transitory form and function. . . " (Damaso & Cotter 2007 : 20) for the recording and storing of a moving target (cf the many attempts at defining slang, and that "Slang lexicographers often comment on the difficulty of determining with any confidence which terms are slang" Coleman (2009 : 314).

4 Product to service

More than twenty years ago information experts prophesied a transition from the dictionary as a product to the dictionary as a service, which was to be understood to imply that rather than "multiple identical copies of a dictionary, sold to users, there would be a single version of a database, from which clients [. . .] obtained the information the required" (Adams 2007 : 9, quoting Dodd 1989 : 87). As Adams observes, this has proved to be an *underestimate* of the ambitions of users, who now not only deem paper to be less informative than an online database but indeed have a whole new notion of the dictionary. Although hardly as a consequence of this change of viewpoint, these new users are said to expect to "participate in the public construction of knowledge, contributing and editing Web content when-

[8] Just the starting point, because Landau's framework is (understandably) both too restrictive and too detailed to be used in its entirety: eg his *scholarly* vs *commercial* is ill suited to UD (and not too relevant for the present discussion). Scholarly works are supposed to be funded by "government agencies or foundation grants in addition to university support supplemented by individual donations." These oppose commercial ones, supported by private investors (2001 : 23ff).

[9] This, understandably, is not specified anywhere in UD, but appears obvious from the varied backgrounds of the contributors.

[10] As opposed to special-field, ie one that singles out some subject area.

[11] As opposed to special-purpose, ie cataloguing some restricted aspects of language.

ever they feel competent to do so." Writing about user-involvement dictionaries in general, Lew puts this as follows: "In the democratic world of the internet, users can play lexicographer as well and create their own online dictionaries" (2011). In Coleman's (even more) tongue-in-cheek wording: "A wide range of online slang dictionaries testify to the perennial faith that anyone who uses slang is qualified to document it" (2009 : 335).

In the view of (Lew 2011), ODs can by and large be classified by the old (problematic and overlapping, but still workable) criteria, but new ones must also be added: three are presented here, which are not inherited from the *treebook.*

Online works are

(k) institutional vs collective[12] in terms of user involvement (collective involves collaborative efforts by a community of nonprofessionals); bottom-up and open point to a similar phenomenon. The "collective" may actually exclude the maintainers of a dictionary, or there may simply exist no such maintainers, or professional editors. "Some online dictionaries do not edit the material submitted by their users at all, which changes entirely the relationship between dictionary maker and dictionary user" (Coleman 2006 : 585).

(l) free vs paid (in terms of publisher revenue): pay-per-view modes or the subscription-based access are obvious types, but when a service is sold to schools or libraries, it is not the end user who bears the costs.

(m) offered as one single/standalone/individual[13] dictionary, or a set of dictionaries from a single landing page.[14]

Summing up the three terms above: UD is a totally free, collective, standalone dictionary.

5 Promotion for UD

5.1 Wikipedia

True to its editorial principles, Wikipedia is neutral and balanced but it projects a positive image of UD (en.wikipedia.org/wiki/Urban_Dictionary).

[12] Predictably, there are in-between cases: the institutional vs collective distinction is more or less blurred: cf the example of Wordnik above.

[13] I will not use *individual* because the term will be indispensable in another framework/classification.

[14] Lew mentions two other arrangements: dictionary portals with merely hyperlinks to multiple dictionaries; and dictionary aggregators, which "excel at pasting together the content of various dictionaries and serving them on a single page (2011 : 2).

As of April 2009, an average of 2,000 definitions were submitted daily; the site receives about 15 million unique visitors per month. Its definitions[15] (to be referred to as *entries* when illustrating them in the present paper) are those of slang or ethnic culture words, phrases, and phenomena *not found in standard dictionaries*. Most words have multiple definitions, usage examples, and tags. Visitors to UD submit definitions were submitted daily; the site receives about 15 mn visitors per month. Its entries are those of slang or ethnic culture words, phrases, and phenomena not found in standard dictionaries. Most words have multiple definitions, usage examples, and tags. Visitors to UD submit definitions without registering but must provide valid email addresses. To be included, all new definitions must be approved by editors, who are volunteers (registered with the site) and follow a set of guidelines. Editors *vote in* or reject new items. There may be hundreds of obviously conflicting entries for one and same term/word. Definitions already in UD may be voted thumbs up/down (but not *out*) by any site visitor. Once in, a definition may be removed by the editors if it is against the Guidelines, but those that have proven popular by voting can't be deleted.

These Guidelines must be appraised if one is aware of the following:

- Guideline No2 warns not to reject racist and sexist (and presumably otherwise offensive) entries, but does not discourage racial and sexual slurs. (I have not yet found the person able to make sense of this distinction). Illustrative Materials (IMs) **A, B** and **C** (possibly **D**) will suffice to show whether UD observes this.
- No5 says not to reject non-slang words, in clear antagonism to one of the basic principles (and takes granted users' ability to demarcate slang from nonslang); also, it warns that "[s]wearing, misspelling, or presence of words in an ordinary dictionary are not reasons for rejection". Misspellings (and/or typos, often hard to distinguish in an unedited "publication") simply do not have to be separately illustrated because (as all discussions of UD recognize) it is awash with them; this can also be observed in the Illustrative Materials.
- No8 has this: "Reject nonsense. Be consistent on duplicates, reject nonsensical, circular, unspecific entries [. . .]",

and this advice is offered in the similar

[15] Because of the confusion between definition and entry (clearly, the UD numbers given do not indicate *definitions* but *entries,* since one entry may contain several definitions), it is not obvious what is involved here: what is submitted, and what is it that gets voted down/up or deleted: whole entries or indeed just some of the definitions therein.

- No10: "Publish if the definition[16] appears to be plausible". **IM/C, IM/D, IM/E** and **IM/F, IM/G** (and some of **IM/H**) offer a taste of how badly indeed UD fares in this area. These are a long cry from the helpful, comprehensible, *explanatory* definitions that one expects of a dictionary.

There is no guideline against theft/plagiarism. One of the reasons behind the many conflicting definitions is that many of them come from different dictionaries (most of them online, some of the "traditional", serious, quality works), with no indication of the source. It is noteworthy that those definitions that are popular by voting simply cannot be removed. This way there could not possibly be a ruling against online theft: if theft is endorsed by popular vote, no steps can be taken to stop it.

UD has three entries for **garbivore** (it was Urban Word of the Day on 24 October 2012), of which the first runs like this:

> A fourth classification of animal in the food chain behind Carnivore, Herbivore and Omnivore that eats only garbage.
> *Every time I put my garbage outside in the garbage can, my dog knocks the can over to eat the garbage inside. I never see him eat anything but the garbage, he must be a Garbivore.*

Because of this carefully worded definition in standard English, you will suspect that it is not your average teenage contributor that has sent it in. The conclusion, however, may be too hasty: although this word/definition actually appears on many sites (Google returns 2,480 hits for it), there is no easy telling in the world of the Net which of those has priority, and which are the pirated ones.

Contrary to what even some of the more balanced descriptions suggest, the thumbs up/down system does not guarantee adequate definitions; neither, apparently, the observing of the Guidelines.

In **IM/A**, where the Thumb Ups dominate with just a small margin, this just suggests prejudice.

In **IM/B**, which is sexist/offensive enough (and has too few thumbs but the definition seems to be liked), **squirrel** is claimed to be a "code word", and **bent wrist syndrome** is used, which has little value because

[16] This is the only place where *definition* is not a misnomer. It is the definition that has to be plausible. This means that it must be explanatory: one that is helpful to someone who really does not know the notion, the word's usage or does not have some other information associated with the entry word.

this expression is not featured even in UD. Even **bent wrist** is only present in UD with a single example, in a grammatically unreliable entry.

The blasphemous **IM/C**, whose 1. is intended to be humorous, appears to be greatly liked, and is supposed to have two meanings/definitions, which it clearly does not have.

IM/E is certain to baffle the reader, and surely is unhelpful. Why Latin America? Why the 5075 thumbs up?

One hastens to add, lest one seems stick-in-the mud red pen police,[17] that **Holy shit** (along with all sorts of taboo expressions as well as ethnic and racial slurs), ought to be included in most dictionaries, but with their appropriate labelling.

Wikipedia commends UD's bonus services such as the Forum feature, where "registered members can discuss enhancements or problems they experience with the site, and vote for changes to be made. Forums are places for lively discussion; recent subjects include:

> *Allow users to upload sounds and images* [. . .] *Get rid of stupid definitions from being first on lists* (sic) [. . .] and *Allow editors to delete more than 5 bad definitions per day.*

I am not sure about images and sounds (this latter is *not* a plea for pronunciation being included). The proposal, however, that something should be done about *stupid* and bad definitions (or entries? cf Notes 19–23) is good news if it is typical: users bemoan lack of quality control. This does not imply, of course, that they are dissatisfied with this kind of meaning-making; maybe they consider that popular approach desirable, just the means of democracy can and must be improved.

5.2 Online media: DIY spells RIP for OED?

5.2.1 The Guardian

Davis (2011)[18] classifies UD as an "open source dictionary of slang phrases and neologisms," and a "rambling free-for-all largely compiled by teenag-

[17] Red Pen Police, with 879 thumbs up and 439 down, was Urban Word of the Day on 9 November 2012. It means 'people who preoccupy themselves with correcting the spelling and grammar of others — normally out of some self-esteem issue or desire to prove some value from their otherwise useless thirty-grand education. I do not know how a word with just one entry like this one receives Word of the Day status. I also have no idea what the problem of those 439 people might be with this item.

[18] Davis quotes this headline without giving the source.

ers making stuff up" — a remark not without irony. He argues that the internet is the future of lexicography — which people now contest. Traditional dictionaries struggle because of the technological challenge: the new OED has a projected publication date of 2037, the costs estimated at £34m. Davis quotes lexicographer Jonathon Green, who discusses and praises slang as "lively, exciting and very creative," projecting a linguist's attitude that is likely to shock many readers. More importantly, and more relevantly to my aim, not only does he explain why the OED must be more careful (with slang),

> The OED deals with hard evidence. With slang there's a strong element of ephemera [. . .] the OED has to present an awful lot of evidence to back up each entry.

he also makes no bones about why the UD is problematic:

> It's amateur hour. They set themselves up as an authority and I don't believe they are. There aren't 2,000 new slang words a day — they don't exist. It undermines the whole point of a dictionary.

The tenor of Davis's article "In praise of urban dictionaries" is neutral, and the text is informative enough; two major distinctions, those between urban and online, and online and open-source are not sufficiently clarified.

However insightfully Green warns, the majority of users share the following view (one comment after Davis 2011):

> Who needs Encyclopedia Britannica or the OED when we have Wikipedia, Spellcheck,[19] and Urban Dictionary?

The question, because it confuses the dictionary and the encyclopedia and also, fails to see the distinction between online and open-source, is roughly a twin sister of "Who needs aspirin when we have smart phones?"

Incidentally, UD has a fair number of *encyclopedic* entries, which is all right as a feature of a dictionary, but then this facet ought to be emphasized. On the other hand, it also has individuals' names, which evidently goes against some of the (hard-to-interpret and impossible-to-follow) Guide-

[19] If this indeed refers to a particular site/service, it may be any of the many (the first four are mentioned here): www.spellcheck.net; orangoo.com/spellcheck; www.jspell.com/public-spell-checker.html; spellcheckplus.com/.

lines. No1 allows "celebrity names", but bans friends' names. "Definitions of first names are acceptable. Names of bands and schools should be published only if they are popular." No4 has: "Publish place names, nicknames and area codes of geographic entities." **IM/G** in the Illustrative Materials displays the item **Budapest Cookie**, which, although having just one thumb down, has been sitting on UD for months (and somehow got voted in, in the first place). **Budapest** itself has 6 entries: #6 (with 45 thumbs ups, 180 down) is as follows, for the greater glory of democratic lexicography:

> To be budapest is to be extremely hungry, afterall [sic] Budapest is the calpital [sic] of Hungary!
> *I'm so f***ing hungy* [sic] *I'm Budapest!*

The rest of the entries—some of them really approximating a genuine encyclopedia entry—see in **IM/H**.

In the same Davis (2011), UD's founder Aaron Peckham reminisces about how it all began, making valuable comments on what he sees as the site's merits. I will comment on his claims one by one.

Peckham and friends talked about

> how different our language was, depending on what part of the country we were from, and how there wasn't a dictionary that captured those differences.

As the entire *word nerd* community and hopefully many outside of it know, there *were* such dictionaries, and they would not have been too hard to find out about. They treat the lexicon, pronunciation, even grammar. UD, allegedly conceived to stop that gap—initiated by someone with no knowledge of such work—offers none of those: a contributor's pronunciation, age and location would indeed be useful in an *otherwise genuine* dictionary. However fast moving slang is as a target, if it used a consistent system of date and region tags, UD could be a more reliable repository (or to less sympathetic observers: lumber room) for slang, or unconventional, or "vernacular" English, or for the lexicon of subculture(s), whatever the label.

Peckham also informs us that

> Most dictionaries are objective. The Urban Dictionary is completely subjective. It's not presented as fact, [but] as opinions. I think that can be a lot more valuable.

How the requirement of capturing dialectal differences may be met subjectively, as opinions, is not clear to me. Also, that

> There is little intellectual rigour about the Urban Dictionary; it is often coarse, profane and offensive, and it goes unchecked for accuracy, even spelling — which for a dictionary must be a first.

Intellectual rigour is quite unfairly contrasted to coarseness, profanity and offensiveness; these can all be handled, and often are, with huge amounts of intellectual rigour. On the other hand, accuracy is acknowledged to be vital *in a dictionary.* Maybe UD is just what a commenter thinks it is:

> Exactly because Wik and U Dic are nothing more than scribble pads for the general population of capricious speakers of amusing but stupid fashionable lingo who want to be cool.

Fortunately, this commenter belongs to *the people,* otherwise even quoting her/him might make one seem one retrograde purist.

5.2.2 New Scientist

Giles (2008) argues right in the title that "word nerd sites help the dictionary pros," and discusses two ODs, Grant Barrett's Double-Tongued Dictionary,[20] and UD, which are a "great resource for professional lexicographers." The former is a carefully researched work, double checked for every item and thus a lot more reliable. Of the latter, the above is an unexpected claim given that, as Giles says, at UD

> [a]nyone can submit a word [. . .], and as its editors do not verify new entries there's no way of knowing whether a term that appears in [it] is used by anyone other than the person who sent it in.

Giles says if you want to check up on claims about a new word, UD is a first point of call, and this seems to be true. It has one overwhelming strength: the sheer volume of material it contains (even if, we might add, the proportion of idiolectal one-offs, nonce-words, hapaxes etc is not

[20] www.waywordradio.org/double-tongued-dictionary; part of *A Way with Words* as of 18 July 2012). The information in this paragraph is four years old: that's **ten minutes ago**, in UD lingo.

known). This sheer volume aspect would be rather dubious as *praise* in the case of a scholarly book, but if one wants a database or a corpus, it sounds promising — to that purpose UD is eminently suited.

UD and other similar ventures, then, provide up-to-the-minute updates and include words that traditional dictionaries miss. They do, however, not call into question the future of traditional dictionaries, Giles concludes: the basics of language move slowly.

> New slang crops up daily but most of it quickly disappears. By waiting years or even decades before deciding whether to include a new word, dictionary editors are able to make a better judgement on how language is really changing.

Apparently, the value of amateur listings lies in the extra dimension they add to word hunting. "No savvy lexicographer" ignores UD, as Grant Barrett writes on his blog in 2006. A first port-of-call UD surely is — but certainly no one-stop.

5.2.3 Damaso & Cotter

Devoted solely to UD, Damaso & Cotter (2007)[21] contrasts traditional English lexicography, with editors having control over selection, meaning and illustration, with an emergent type of lexicography by the collaboration of contributing untrained end users to engage in the making of dictionaries. In UD, authoritative editors are replaced by "what can be seen as a large-scale usage panel."[22] UD is supposed to capture ephemeral spoken language and represent popular and divergent (as opposed to authorized and uniform) views of meaning. By starting UD, Peckham had the express aim of the typical radical, of "challenging the authority paradigm of lexicographic tradition."

And it does indeed. Spellings are variant and inconsistent, as are punctuation conventions. The definitions follow no (formatting or content-related) guidelines. The examples often do not use the headword.

As traditional dictionaries are often consulted as authorities on usage, on disputed points of spelling, meaning, etymology or pronuncia-

[21] In 2007, UD still defines just more than 1mn words (Damaso & Cotter 2007 : 19), while on page 20 it is claimed that it has over 1mn definitions for over 400,000 unique headwords. I find the two claims hard to reconcile.

[22] Anyone familiar with a usage panel, eg in pronouncing dictionaries, knows why the hedge is needed.

tion (and perhaps most importantly, on questions on whether a particular word *exists or not* in the first place), similar reverence is claimed to be afforded to UD (Damaso & Cotter 2007 : 23). Other sources also mention that UD is often seen as an *arbiter* of meaning, among other things. Damaso & Cotter (2007 : 24) even claim that UD's authority "resides in the fact it *challenges* traditional dictionaries," and they make explicit mention of the fact that UD's definitions with the greatest number of Thumbs Up usually have several of the following traits: humour, language play, wisdom, polysemy [. . .].[23] Polysemy, singled out like this as a characteristic — probably positive — feature of entries, is at least odd: either the *definiendum* is polysemous, in which case there is not much the lexicographer can do (and in the proportion of polysemous items in UD must be roughly the same as in other similar dictionaries), or it is the words in the definitions that are polysemous, but then again the compiler can do little, unless one uses a controlled vocabulary (which UD clearly does not).

Also, it is openly acknowledged that UD entries (easily against the Guidelines, it seems to me) are often used [as][24] an instrument of competition or intimidation. "Battles erupt, manifested whenever a UD user fights another for meaning-making rights. This typically occurs when User A writes a definition; user B refutes or amends User A's definition with her own; and other users join in by ranking the existing ones (with Thumbs Up/Down) and posting their own definitions" (Damaso & Cotter 2007 : 24).[25] UD entries use bullying and name calling, or flaming, to use *onlinese.*[26] There are "trouble-seeking trolls," that is, "self-appointed online saboteurs" (Damaso & Cotter 2007 : 25).

[23] This list goes on as follows: ". . . and linguistic competence for the desired voice of the entry" — a feature I simply could not interpret.

[24] The word *as* is actually missing from the text.

[25] Even more tellingly, Damaso & Cotter (2007:24) informs us of one UD definition which notes that it is "a quite convenient tactic often employed by debaters on the high school circuit to put a definition that they want on the site so that they may quote it in round."

[26] *Onlinese* I have made up for the purpose of this paper. Google returns not a single hit for it, indicating it is not on UD either. I post it on UD so I can soon check and report on how this *neologism* fares in cyberspace. For the format of my submission, see Illustrative Materials IM/I. UD promptly answered the following: *You sent this to Urban Dictionary, but it is* not yet published. *This is your last opportunity to check it out before it gets reviewed by editors.* There was no sign of my **onlinese** on UD within the first 24 hours.

These and many similar problems do not discourage users, or, more likely, they are not aware of them.

And the following entry has not even been added by a troll. This is a bona fide contribution, relatively popular, from someone not ignorant of German accent (devoicing and dental fricative substitution), so apparently has the right to meaning-making — but completely unfamiliar with dictionary-making. There is no POS label, **moof** is defined as "a German", suggesting a noun; it has **liederhosen** for **lederhosen**, which would indeed be 'song trousers' (one wonders why they would be called that).

> #13 out of 45 entries for **moof** (15 up, 40 down)
> A German with bad english attempting the word: move.
> *Moof your goddamn liederhosen (song trousers) off ze stuhl (chair)!*

I don't think it is hard to see the irony here. It is paradoxical that people should turn to UD if they *know it well,* ie if they know that it is exactly as described above (and earlier on in this paper): conflicting definitions; fights over "meaning-making rights"; made-up definitions; entries never removed even if they have a majority Thumbs Down vote; obvious fake entries/definitions; spellings that make words unrecognizable so their existence will be impossible to verify, etc. Not just these obstacles, however. You can't seriously go to UD to check whether a word *exists,* and the next moment post *your own* word. If the knowledge that you and *your peeps* use it (in such and such a way) is not enough to guarantee that it exists (and is used in such and such a way), then you do *not really trust* collaborative dictionaries because, by definition, those can only provide information from your *peeps* (peers, outside the UD circuit). You should not be thinking "I'll find out if it *is* in," but "I'll *send* it in, so it *will be* in."

Damaso & Cotter (2007 : 20) underline the following novelties of UD. It (i) "places an emphasis on democracy and equal access to meaning-making." They claim that "by relying on users of a language to select and define words for a dictionary, UD has (ii) equalized access to and formulation of the lexis." More importantly, they argue that UD (iii) authorizes usage (same as other general-purpose dictionaries), (iv) stores vocabulary, (v) improves communication, (vi) strengthens the language, and (vii) affords metalinguistic reflections on it.

While (iv) can hardly be denied (being so trivial), (v) is hard to take seriously, and (vi) does not seem to me to make much sense, the issues involved in (i), (ii), (iii) and (vii)—this latter one somewhat apart from the rest—are worth looking into. This will be topic of the next section.

6 Democratization?

The following statement, not by a 17-year-old contributor to UD but an expert, a (meta)lexicographer, is a wonderfully succinct illustration of how badly something may be amiss with the interpretation of the notion *democracy.* One wonders how any meaningful discussion of "bottom-up lexicography" is possible on such premises.

> Wiktionary offers very simple grammatical data, comprehensible for most users in accordance with its *democratic* nature. (Fuertes-Olivera 2009 : 120)

By that logic, democratically conceived medical textbooks are supposed to contain just the outwardly visible parts of the human body; also, there should presumably be a kind of *democratic* maths book that only treats ordinary whole numbers and omits the zero.

It has often been suggested that UD is acclaimed as a *democratic* dictionary. Two authors whose views will be discussed in what follows (Kirchner 2009 and Smith 2011) even go beyond that claim when they stress that UD challenges dominant ideologies. I will mostly use Kirchner 2009, the more radical statement of this stance, and refer to Smith 2011 only once.

UD asks the reader/user to "redefine her/his world": this is imperative because, according to both Kirchner and Smith, there are people that *wield while others contest* definitions, in service of classification systems and power relations. Kirchner looks at (the degrees of) *user involvement* in her thorough study of ODs. User involvement can be of the *community-building* type, which enhances *user control* versus professional (lexicographic) control over content (meaning).

Where her line of argument goes wrong already at this point, is what I feel to be an inadequate separation of *content, meaning,* and *definition.*

Kirchner contends that "classificatory decisions range from the threshold question of which words or phrases should be included at all." Eg nonce-words are excluded, but this is problematic: when does a word cease being a nonce word? Also, are varying senses of a word different enough to merit separate headwords? She also mentions polysemy and homonymy (without exemplifying these, or indeed any other linguistic objects, in her study) as if they were also weapons brandished by those with dictionary-based power and linguistic *capital*).

Smith (2011) also comes back to the issue of "word or not word." She presents the intriguing case of **meep**, which was banned from schools, so that its use entailed suspension. Surely a stupid move; but does it have

to do with (traditional) lexicography? Smith (2011 : 43) mentions a student who thought it unfair to "ban a word that's not even a real word," and another who opines that **meep** "doesn't mean anything in particular." Smith claims that dictionaries struggle to draw the line between acceptable words and those that "aren't even real words" (2011 : 45). But if lay people apparently do not consider **meep** as a real word with real meaning, and they feel they must turn to UD or some other authority to find out that it *is*, then they need the support of an authority. UD, of course, is hailed as an authority on (s)language.

However hard Kirchner and Smith try to reduce the notion *traditional* in dictionary making to a four-letter word, no self-respecting traditional dictionary today embraces prescriptivist language ideologies that license "some linguistic forms as meaningful while denouncing others as nonsense" (2011 : 47). Yes, **meep** *will* be included if its is justified. Until such time, democracy does not suffer: **meep** has already gone viral on the net, with 3,300,000 Google hits and numerous .mp3 and .jpg meeps.

Questions like "word or no word?", "include it or not?", "when is inclusion of an item warranted", "how is it to be defined in a semantically/pragmatically adequate fashion?" are perfect genuine semantic and lexicographic problems,[27] but no-one in 2012 can seriously suggest that English dictionaries exclude anything said by speakers. To me, both Kirchner and Smith miss their targets. These issues cannot be solved by fighting the supposed *hegemony* of dictionary makers or theoreticians. It is also true that (some, not all) dictionaries do standardize (to some extent), but that mainly concerns spelling. No dictionary foists upon speakers grammatical forms (although schools may, and often do, and prescriptivists do promote elite preferences), if only because no-one is obliged to use one; talk about the "hegemonic potential of dictionary definitions" is surely far-fetched.

According to Smith

> the case of **meep** illustrat[es] the evolving processes that lie behind verbal signification and its presupposed boundary between language and nonlanguage, between sense and nonsense.
>
> [. . .] the internet has provided users with a new domain in which to challenge such language hierarchies. [. . .] young people are using the internet to

[27] Bauer (2003 : 34ff), discussing productivity, shows that the notions of *existing/actual/occurring/established word, new word, potential word, attested word, nonce-word* and *probable word* are all fraught with difficulty, partly because they mean radically different things from the point of view of the individual speaker, some idealized speaker, and the speech community.

> seize the rights to lexicographic meaning-making and redefine the process of definition. (2011 : 44)

Kirchner sees technological advances as having cut both ways: they have added to the opportunities for lay people to engage in former professional-only practices, but at the same time they gave a boost to professional lexicography, actually *heightening* the barriers from ordinary users to input and influence the professionals' work.

This paranoid-sounding claim is bolstered up by quotes from Bakhtin and Vygotsky, who share the author's conviction that "words come not out of dictionaries but out of concrete dialogic situations."[28] But dictionaries represent

> social processes that attempt control over a constant flux and virtually endless variation of individualized meaning-senses, by crafting definitions of words and phrases, and embedding them in formats (traditionally, books) with some continuity."

This, in Kirchner's view, is the essence of top-down dictionary-making, a source of cultural capital, deployed in service of national governmental interests. The "exemplary dictionary is thus both by-product and tool of [. . .] education, literary production and governance [. . .] that maintain class domination. Dictionary creators [. . .] omit the vocabulary and usage of dominated groups" or label those entries as vulgar or popular.

No-one today, however, doubts that word senses/meanings come not from dictionaries but speech situations. And are the proponents of this view convinced that people learn their words and *their* senses from dictionaries?

The role of (language) education and the prescriptivism and elitism that it involves in maintaining the status quo cannot be denied. But there have always been better and worse ways of doing it. And if someone were really convinced that traditional dictionaries overwhelm us, and user-generated free dictionaries are the solution to shake off the tyranny of traditional lexicography, then they should seriously study the UD entries. All right, *Vive la révolution!*—but at least be willing to study the landscape left by the revolution.

[28] No self-respecting expert has ever claimed that words come out of dictionaries. Denial of this does not support any argument whatsoever.

Kirchner classifies user participation setting up site rankings (of general reference works and dictionaries) as low, moderate, and high, depending on the opportunities they provide for *individual(ized)* identity building and *community* identity building, two very different notions both relevant for ODs. User involvement at one extreme, where the users are atomized/isolated, may actually enhance *professional* control: the information that users provide will be channelled on to professionals, who use this according to *their* own criteria for content. A diabolical stratagem indeed. At the other extreme, user involvement is actual control: this requires users to be in touch, forming a *community* that sets criteria for content. Sites also differ in terms of how highly they value users' input of both types.

It also happens that otherwise traditional dictionaries such as Merriam-Webster's Open Dictionary Online not just teach kids to work with definitions but actually *socializes* school children *into writing* dictionary definitions as a fun activity — this aspect was involved in Damaso & Cotter's (vii) above.

High involvement and interactivity in themselves, alas, are no guarantees for real "meaning-making": Kirchner herself recognizes that UD's ongoing chat room does not discuss words and definitions, but "revels in competitive patter of seemingly light-hearted and gross insults" (2009 : 15). She says, nevertheless, that the possibility is there.

One often feels that the *anti-lexicography revolutionaries* really want to defeat their own misconceptions. Smith writes that the "online, democratic scriptorium where neologisms and slang are explicated, tried and rated" produces mostly entries that fade away but some "reveal themselves as *mots justes*, moving from Urban Dictionary to the OED" (2011 : 47) — an argument reminding one of Kirchner quoting Bakhtin and Vygotsky. In reality, the route of any word from UD to OED is clearly mistaken. As stressed by all authors discussing this topic, slang has been used for centuries *without user-created* definitions in dictionaries and *despite traditional* definitions in "top-down" paper dictionaries. Words proceed from speakers to speakers. Thus they do not proceed from one dictionary to another, but from *speakers* to dictionaries. As may be expected, UD includes (some of these) new words faster, and practically wholesale, because it can react promptly and because it does not seem to mind subjectivity, fictionality and outright errors.[29]

[29] This is not criticism by this author, but an admission coming from all analysts who otherwise commend the UD and user-participation works.

7 The potential in UD

Word creation processes at work in the general lexicon would be an exciting area of study in UD (whether seen as a slang dictionary or not). The site, however, provides no linguistic statistics: most entries do not even have a part of speech label, as indeed, within one and the same entry, several POSs are often listed; it is thus impossible to find out the proportion eg of initialisms and abbreviations, blends and compounds, shortenings/clippings and doublings that get included. One's impression eg is that deliberate coining is typical, if not predominant in slang innovation (primarily blendings and initialisms).

One wonders what percentage of these almost 7 million items are playful (meant-to-be-funny) blends such as **prolebrity** (professional athlete that achieves celebrity status); **Frankenstorm** (hurricane and winter storm hybrid, involving a "monster" combination of high winds, heavy rain, extreme tides and snow); **hornymoon** (when a couple haven't seen each other for a while, the next time they meet is going to be their hornymoon); and **garbivore** (a fourth classification of animal in the food chain behind Carnivore, Herbivore and Omnivore that eats only garbage). It is a shame that such blends (or any other linguistic object) cannot specifically be investigated.

If one knows how to separate the wheat from the chaff, UD is well suited for some kinds of academic searches. One such example will suffice. Kornexl (2006 : 253) argues that

> [i]f the productivity of *-ette* in PDE was restricted to this type of disparaging, non-PC nonce words, Burchfield [...] and Peters [...] would probably be right in predicting the imminent end of the suffix as a personal marker, but the latest additions to the OED suggest that this versatile element has found a new field of application: **modette**, **punkette** and **ladette** stand for an innovative type of "antagonistic terms", which flourishes in colloquial registers and slang.

In the footnote she mentions UD, a rich source for such formations (eg *chavette, chumpette, dudette, playerette, pimpette*), which advertises itself as the "democratic guide to street slang."

There has ever been a market for slang; neologisms have always been followed with interest; the mass market for "the language of marginal social groups" has grown. A popular dictionary such as UD, which may be enjoyed and used at several levels like a good work of art, is great fun for the majority of users, and if suitably employed, is a vast hunting ground

for the linguist, a truly undepletable (since constantly expanding) corpus and database, a "reliable barometer of social currents and a fascinating expression of contemporary anxieties and interests (Coleman 2009 : 335).

Or, in the *more democratic* wording of a comment on Davis' article in *The Guardian* (www.guardian.co.uk/books/2011/apr/21/in-praise-urban-dictionaries?commentpage=1).

> [The] Urban Dictionary is great at what it does and the OED is great at what it does. Happily we live in a world where both co-exist.

Roger's *Profanisaurus,* a world play on Roget's *Thesaurus,* is another treasure trove for subculture, "the book marketed as the foulest-mouthed book ever to stalk the face of the earth" (cf en.wikipedia.org/wiki/Roger's_ Profanisaurus). Read and enjoy UD as such; wield it as emancipatory weapon to combat lexicographic oppression by the powers that be; use it as a dictionary if you don't know better. UD is just word play on *dictionary.*

REFERENCES

Adams, Michael. 2007. The Critical Dictionary and the Wiki World. *English Today* 23(2): 9–18.

Bauer, Laurie. 2003. *Morphological productivity.* Cambridge: Cambridge University Press.

Coleman, Julie M. 2006. Lexicography. In: Bas Aarts and April McMahon (eds.), *The handbook of English linguistics.* Oxford: Blackwell. 581–600.

Coleman, Julie M. 2009. Slang and cant dictionaries. In: A. P. Cowie (ed.), *The Oxford history of English lexicography* Vol. 2, Part I. Oxford: Oxford University Press. 314–336.

Damaso, John and Colleen Cotter. 2007. UrbanDictionary.com. Online dictionaries as emerging archives of contemporary usage and collaborative lexicography. *English Today* 23(2): 19–26.

Davis, Johnny. 2011. In praise of urban dictionaries. *The Guardian*, Thursday 21 April 2011. www.guardian.co.uk/books/2011/apr/21/in-praise-urban-dictionaries. Retrieved on 10 November 2012.

Dodd, W. Steven. 1989. Lexicomputing and the dictionary of the future. In: Gregory James (ed.), *Lexicographers and their works.* University of Exeter Press. 83–93.

Fuertes-Olivera, Pedro A. 2009. The function theory of lexicography and electronic dictionaries: Wiktionary as a prototype of collective free multiple-language internet dictionary. In: Henning Bergenholtz, Sandro Nielsen and Sven Tarp (eds.), *Lexicography at a Crossroads: Dictionaries and Encyclopedias Today, Lexicographical Tools Tomorrow. Linguistic Insights—Studies in Language and Communication, Vol. 90.* Bern: Peter Lang. 99–134.

Giles, Jim. 2008. Words nerd sites are helping the dictionary pros. *New Scientist* 197(2641): 22–23. dx.doi.org/10.1016/S0262-4079(08)60293-6

Kirchner, Corinne. 2009. "Define your world": Dictionaries of today in struggles over control of meaning. In: *RC25 Language & Society Special issue: Hegemonies in classification processes.* www.crisaps.org/newsletter/winter2009/Kirchner.pdf. Retrieved on 10 November 2012.

Kornexl, Lucia. 2006. Women and other 'small things'. -ette as a feminine marker. In: Richard Dury, Maurizio Gotti and Marina Dossena (ed.), *English historical linguistics. Vol. II: Lexical and semantic change.* Selected papers from the fourteenth International Conference on English Historical Linguistics (ICEHL 14), Bergamo, 21–25 August 2006. 241–257.

Landau, Sidney I. 2001 *Dictionaries. The art and craft of lexicography.* Cambridge: Cambridge University Press.

Lew, Robert. 2011. Online Dictionaries of English. In: Pedro A. Fuertes-Olivera and Henning Bergenholtz (eds.), *E-Lexicography: The Internet, Digital Initiatives and Lexicography.* Continuum, 230–250. hdl.handle.net/10593/742

Smith, Rachel E. 2011. Urban dictionary: youth slanguage and the redefining of definition. *English Today* 27(4): 43–48.

Thorne, Tony. 2007. Introduction. *Dictionary of Contemporary Slang.* 3rd ed. A & C Black Publishers Ltd.

Illustrative materials

IM/A

#12 out of 23 entries for **Negro** (64 up, 48 down)

Term used to describe a disadvantaged colored folk usually from the south who refuses [sic] to assimilate into society, finish school, goto [sic] college, and get a job without complaining. *That Negro Teraminisha has thirty three kids and no job and buys her drugs off her welfare money*

IM/B

(It turns out that one of the meanings of **squirrel** is 'gay man').

#26 out of 131 definitions for **squirrel** (5 up, 2 down)

Code word for "gay" men. Squirrels like nuts, so do "gay" men. Squirrels have the bent wrist syndrome, so do some "gay" men.

IM/C

#1 out of 27 entries for **holy shit** (1137 up, 265 down)

1. God's poop
2. An expression yelled at something bad and/or surprising

1. If God ever took a dump, I guess it would be holy
2. Holy shit! Those drugs came out of nowhere, officer. You know more about them than me.

IM/D

#1 out of 1 entries for **bent wrist** (11 thumbs up)

code word for a male thats [sic] very very girly or gay
Wow their are so many bent wrist males in here

IM/E

#1 out of 264 entries for **gay** (5075 up, 1007 down)

A type of squirrel that lives in Latin America.
Look at that gay scampering across the way!

IM/F: pie

Some of the 158 "entries" for pie:[30]

#158 (12 down)

a piece of crap food thats so dry, it tastes like youre [sic] eating dirt.
mom:hey honey, would you like son [sic] *pie?*
son:no thanks, that stuff tastes like sh1t![31]

#25 (13 up, 6 down)

a slang term for vagina

#20 (124 up, 98 down)

The food behind the stars

#3 (760 up, 354 down)

A food given to us mortal beings by the Gods themselves. Usually consists of a circular pastry filled with anything from chocolate to blackbirds. Could be compared to a quiche with a pastry lid but quiches are for posh French people whereas pies are universally accepted by anyone. Can also be used as a weapon when thrown. Associated with fat people.

I like pie and I cannot deny!
Give me that pie you fat fucker!
You fucking clown if you throw that pie at me I will shove those oversized boots up ur fucking ass!
Oi you fatty, cut down on the pies!

#2 (78 up, 29 down)

1. The holiest of all substances known to man.
2. The ruler and savior of all things mortal, immortal, living, dead, or inanimate.
3. Often comes after "lol".
4. Everybody's favorite word to hear and/or say.
5. Better than Cake

Examples:
1. Oh Great pie, I ask that you watch over our peaceful village.
2. YOU WILL OBEY THE PIE!
3. lol pie.

[30] UD, as of 02/11/2012. The data may change fast: by 16/11/2012 there were 159 entries; there were no thumb-ups nor thumb-downs for the then last four of them; and #156 was this: **When u scared or soft.** *Fool pie dat nigga slaped him and he aint do nothing*.

[31] The number *1* for *i*, probably deliberately.

4. Girl one: Guys are such jerks!
Girl two: I hear you... we should swear off men forever.
Guy: hm... Pie.
Girl one & Girl two: LET'S HAVE SEX RIGHT NOW!
5. Pie > Cake

IM/G

#1 out of 1 entry for **Budapest Cookie** (1 thumb down)

The Budapest Cookie, sometimes known as the Buda and often mispronounced as Huda, is a cookie that tends to make mountains out of molehills. Occasionally this mountain is doubled, becoming a mountain range.
Oh no, those oreos are turning into a Budapest Cookie. Watch out, I hear it's deadly.

IM/H: Budapest

6 entries (#6 see in the body of the paper)

#1 (114 up, 26 down)

capital of Hungary

anything about Budapest...
your impression, experience, and so on

#2 (44 up, 10 down)

Budapest is the capital of Hungary. Danube river flow [sic] through and separates the city to Buda side(western) [sic] and Pest side.
Regarded as one of the most beautiful cities in Europe, its extensive World Heritage Site includes the banks of the Danube, the Buda Castle Quarter, Andrássy Avenue, Heroes' Square and the Millennium Underground Railway. Marvellous scenery from the hills of Buda.
Dohány Street Synagogue is located in Erzsébetváros, the 7th district of Budapest. It is the largest synagogue in Eurasia and the second largest in the world.
Lots of spas and bath [sic]. For example Széchenyi, which is the biggest bath complex of Europe. Don't miss bathing.
Only the 1/3 of hungarians [sic] speak any foreign language.
Avoid tourist specificated hyenas [sic]. It can be hard to find marijuana cause it is stricly [sic] illegal (but they won't send you to prison for a joint.) You can drink hungarian [sic] fruit spirit=pálinka.
Not a costly place at all.

I met a wonderful women [sic] in Budapest's night, but I can't recall her name, because I was drunk.
1/7 of hungarians [sic] live in and around Budapest.
People of Budapest always complaining [sic].

#3 (12 up, 7 down)

Capital of porn.

John: Did you know, that Sabrina Sweet is hungarian? [sic]
Mike: Man, I told ya Budapest is the capital of porn!

#4 (8 up, 13 down)

A term for some dank marijuana.

You got any budapest?
Hell yea nigga I got that thrax!

#5 (33 up, 88 down)

One who would taunt, or otherwise annoy Buddha.

That tourist, taking yet another photo of that Buddha statue is a Budapest.

IM/I

SUBMISSION UNDER REVIEW

Your entry is under review by editors.

onlinese

The language/style typically used in online communication (mobile phones, chatrooms, FB, Twitter), as opposed to offline communication. Online lingo.

UD entries often employ bullying and namecalling, or flaming, to use onlinese.

by José Pepe on Nov 17, 2012
tags: language, slang, internet, lingo, style

IM/J: red stater

This word, with its four entries, is a good example of how UD can and cannot be used. It is a useful tool if one uses it as it were a corpus: the words appear in their natural habitats. As a dictionary, it is next to useless, as this entry illustrates.

The entries are a typical flame war, from #1 to #4. The spelling is adequate, almost perfect.

#1 and # 2 are nothing but prejudice, #2 probably even worse.

#3 is not at all informative, and does not even pretend to be a dictionary entry. Told in 2nd person singular, it is a denial of the accusations in #1 and #2, a fight between users, and as such should go to the Forums. Finally, #launches a counterattack.

(Atkins and Rundell 2008 calls attention to the entry **red stater** in UD).

#1 (80 up, 44 down)

A citizen of any state whose electoral votes went to a republican in tbe [sic] last election. So-called because of network news' electoral maps. Interestingly, the populations in red states have lower than average IQs, lower than average earnings, underfunded public schools, higher rates of poverty, homelessness, disease and crime; and every "red state" in the country recieves [sic] more federal funding than it pays (read:welfare).

Red staters are easy to spot. They drive 30 miles to Wal Mart to save .08 on a jar of mustard. That is, when they're not burning a cross on their neighbor's yard because he didn't go to church this week; or beating up n*ggers, gays or jews. They believe they're God's chosen even though they're lucky if they make more than $6.00/hour working the drive through at Hardee's.

#2 (38 up, 18 down)

A deeply Christian white person, married young and then divorced. Has a lower than average level of knowledge and intelligence, prone to primitive suspicions regarding supported scientific theories such as greenhouse gases and evolution. Has had a poor education, and is less likely to hold a high school, college, or graduate degree than their blue state peer. Income is proportionate to their educational level. Prone to archaic displays of tribalism,

manifested by chewing tobacco, driving a pickup truck, and owning a shirt with a confederate flag.
Always votes republican, for reasons unknown to them, but rationalized post hoc as having something to do with a mixture of self reliance, not giving tax money to black people, being able to shoot guns and discriminate against gays, and preventing the abortion they wish their ex-wife would have had. None of the ideals about being self reliant or keeping their hard earned money (it is, due to low education levels most form skilled and unskilled labor pools) prevents them from using and abusing liberal government programs like Social Security, Welfare, and Medicare should the situation present itself.

"I'm a proud red stater, voted for Bush twice cause he's gonna keep me safe. Course America got problems. After I got laid off after I hurt my back cause the doctors said my spine can't take all that weight, we've had to cut down. But at least we're mostly a Christian nation of god fearing folks."

#3 (35 up, 59 down)

Boy, you people sure have inaccurate and ill-intentioned opinions about the residents of the Red States don't you? Just so you know, the overwhelming majority of Christians don't go around committing such hate crimes as you are implying that they do.
You people in the Blue States are just resentful and enraged that George W. Bush and the Republicans won the election, and you people always will be until another Democrat finally makes his/her way into office.

You think the Red Staters are uneducated, ignorant rednecks and bigots? Why don't you educate yourselves a little (or even A LOT) before you go out making a bunch of accusations about us, hypocrites.

#4 (36 up, 76 down)

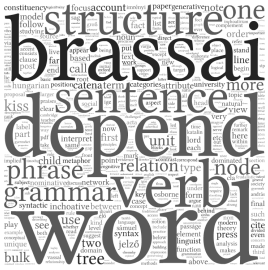
A real man or woman; a true American patriot. Contrary to popular liberal belief, Red Staters (aka Republicans) are actually more open-minded and tolerant of things than they are given credit for. To begin, the overwhelming majority of them are NOT racist. There are tons of Democrats who are racist, however. (Keep this in mind, it was Democrats in the past who promoted mistreatment of black people, and wanted to keep slavery alive. There are many white democrats today who still despise blacks. Yes, it is TRUE.)
Next, we believe in women's rights. We believe that women have every right to leave the home, get a college degree, become successful and get a job, etc. To say otherwise about our stand on women's rights is BULLSHIT. Also, Red Staters (or Republicans) do NOT go around committing hate crimes on racial minorities, homos, lesbians, or non-Christians. (Just so you know, I have fellow devoutly-Republican friends who are ATHEISTS!!! AND, I don't criticize them for it, either.) You people fail to realize that there are millions of Republicans who are actually racial minorities. These include asians, Native Americans, Hispanics, subcontinient [sic] Asian Indians, and even a few black people.

IM/K

#1 out of the 35 "entries" for **slang** (4876 up, 1581 down)

"the only reason Urbandictionary.com exists"

Péter A. Lázár
lazar.a.peter@btk.elte.hu
Eötvös Loránd University
Budapest



Constituency or dependency? Notes on Sámuel Brassai's syntactic model of Hungarian*

András Imrényi

1 Introduction

This paper addresses the question whether constituency (phrase structure) or dependency forms the backbone of Sámuel Brassai's syntactic model of Hungarian. A Transylvanian linguist of the 19th century, Brassai is credited with pioneering studies on information structure, and regarded by some to have been a precursor to generative grammar (É. Kiss 2005, 2008a). One aspect of the latter interpretation is that Brassai's model of Hungarian is seen to be constituency-based, and essentially identical with modern accounts proposed in a generative framework.

While this interpretation is certainly legitimate, finding sufficient support in Brassai's text, I will suggest that treating him as a phrase structure grammarian would be misleading. Putting his social network metaphor at the centre, I will argue that Brassai's conceptualization of the clause clearly falls within the tradition of dependency rather than phrase structure grammar. The argument will rest on both Brassai's general discussion of syntactic theory and specific details of his account of Hungarian word order.

* The research behind this paper was supported by the Hungarian Scientific Research Fund (project no. 100717, "Research in functional cognitive linguistics"). I would also like to take this opportunity to thank Professor Varga, to whom this volume is dedicated, for many years of trust and support, Lajos Marosán for close-reading Brassai's text with me at a doctoral seminar, and Timothy Osborne for discussions on word order and dependency grammar.

In §2, I will start by comparing constituency- and dependency-based approaches to syntax. This will be followed in §3 by a review of *prima facie* evidence in Brassai's writing for adherence to the principle of constituency. In §4, I will challenge this interpretation by citing Brassai's elaborate social network metaphor in which SENTENCE STRUCTURE is accessed via the source domain of FEUDALISTIC SOCIETY. Based on this metaphor, an attempt will be made to interpret Brassai's model as entirely dependency-based. Finally, summary and conclusions follow in §5.

2 Constituency vs dependency

As Meľčuk observes, "there are two diametrically opposed methods of describing the syntactic structure of natural sentences: dependency (D-) trees and phrase-structure (PS-) trees. Obviously, combinations of the two methods are possible, with lines of compromise being drawn at different points; but there is no essentially distinct third possibility" (1988 : 13).

The intuition behind constituency analysis (yielding a PS-tree) is that "the structure of an expression could be exhibited by dividing the expression into parts (its immediate constituents), further subdividing these parts, and continuing until syntactically indivisible units were obtained" (Blevins & Sag, to appear: 1). Depending on what approach is taken, words or morphemes may be the atomic "building blocks" for the purposes of syntax. In generative grammar, a bottom-up perspective is now generally applied (see, eg Chomsky 1995): structure-building starts with the indivisible units and works its way up to the level of the sentence. Crucially for the comparison, units above the word level, ie phrases and the sentence itself, each correspond to a unique node of the PS-tree.

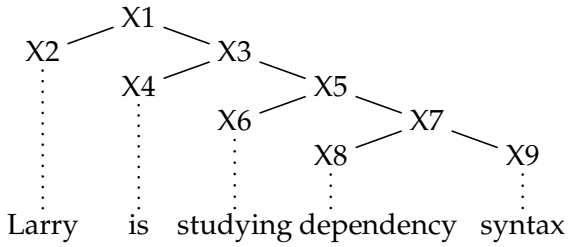
By contrast, a dependency tree of a sentence takes basic lexical units (typically words) to serve as nodes, and the tree (a directed acyclic graph) represents the binary asymmetrical relations (dependencies) between them (cf Nivre 2005 : 2). Units above the word level are not treated as unique nodes; rather, they are merely implied by the network of dependencies (cf Hudson 2007 : 121). Principles of dependency grammar (DG) require each node to be dominated by one and only one other node (its head), except for the so-called root node, which is undominated. In most DG analyses of a simple sentence, this node is the finite verb or auxiliary. On the other hand, a word can have more than one dependent, as is the case with ditransitive verbs, for example.

Below is a comparison of a PS-tree, (1a), and a D-tree, (1b), of the structure of *Larry is studying dependency syntax* (Osborne 2005 : 155). Whereas

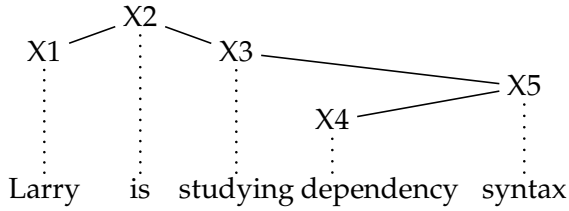
the former explicitly marks *dependency syntax*, *studying dependency syntax*, etc as structural units or "building blocks" (here designated by the X7 and X5 nodes, respectively),[1] hence the number of nodes greatly surpasses the number of words, the latter only posits as many nodes as there are words in the sentence. All information about phrases is implied by the network of word-to-word relations.

(1) *Constituency and dependency compared* (Osborne 2005 : 155)

a.



b.



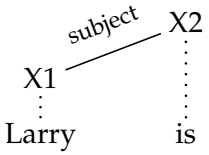
A practical difference between the two approaches (in their typical instantiation) concerns the use of non-relational vs relational categories. Phrase structure grammar focuses on how smaller linguistic objects are "put together" to form larger ones, from morphemes through words and phrases to sentences. Thus, categories denoting *unit types* (especially word classes, and their projections) tend to populate the syntactic tree. By contrast, dependency grammar is predominantly concerned with categorizing the various *relation types* in which words may stand with one another. This entails a preference for such functional, relational categories (treated as theoretical primitives) as subject, object, etc. Although the latter are also frequently referred to in phrase structure grammars, they are not intrinsic to that kind of description, and Chomsky famously remarks that "subject" is a term derivable from "NP immediately dominated by S" (1965 : 71).

The D-tree in (1b) is lacking labels, eg the subject relation between *Larry* and *is* has not been specified as such. If one were to add labels to

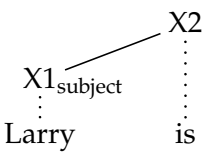
[1] In a labelled phrase structure tree, X7 could be analysed as a noun phrase (NP), and X5 (more controversially) as a verb phrase (VP).

the tree, these could be attached to the graph's edges, as in (2a) below. An alternative would be to assign the label to the dependent's node, as in (2b). However, even in this case, the label should be interpreted as classifying the relation of that unit to its mother node rather than as classifying the unit itself.

(2) a.



b.



As a further important point, let us consider the question whether only phrase structure grammar can recognize units larger than the word. The answer is clearly no; as I have noted above, dependency grammar also has a way of granting phrases a certain grammatical status. The important difference lies in the fact that for a DG description, these phrases will be *implied* by a (sub)network of dependencies rather than correspond to a unique node in the tree. A theory-neutral definition of phrases/constituents, also applicable to DG, is as follows (Osborne 2006 : 54):

(3) A node plus all the nodes that that node dominates.

On this interpretation, *dependency syntax* and *studying dependency syntax* are also phrases under the DG analysis in (1b), despite there being no NP or VP node in the structure.

Finally, it is noteworthy that dependency grammar can recognize types of unit which would be more difficult to accommodate in a phrase structure grammar. Building on O'Grady (1998) and Osborne (2005), Osborne & Groß (2012) introduce a type of unit called the *catena,* defined over a D-tree as follows:

(4) A word, or a combination of words which is continuous with respect to dominance.

In (1b), *is studying* is not a phrase as it fails to include all the nodes that its root (*is*) dominates (cf (3)). However, it can still be captured as a catena, since the two words stand in a direct relationship of dominance. More complex expressions such as *has been studying* in (5) also count as catenae, in line with traditional descriptions classifying it as the present perfect continuous form of *study.*

(5) John *has been studying* for quite a while.

To summarize, this section has highlighted some major differences between phrase structure grammars and dependency grammars, which, according to Meľčuk, "represent two diametrically opposed methods of describing the syntactic structure of natural sentences" (1988 : 13). Key points of divergence concern (i) the use of non-relational vs relational categories in the two approaches, and (ii) the treatment of units larger than the word. It has been suggested that DG can easily recognize phrases/constituents (corresponding to networks of interconnected elements rather than unique nodes of the tree), with the concept of catenae further increasing its descriptive potential.

In the next section, I will discuss evidence suggesting that Brassai is adhering to a constituency-based conception of syntactic structure, as proposed by É. Kiss (2005, 2008a). This view will be subsequently challenged in §4.

3 Evidence for constituency (phrase structure) in Brassai's syntactic model

Brassai's most significant breakthrough is the discovery that natural sentences in Hungarian and other languages tend to be divided into what he calls "inchoative" and "bulk", corresponding to the notions "topic" and "comment" (or "predicate", cf É. Kiss 2008b), respectively, of modern accounts. On the formal side, inchoatives are characterized by sentence-initial position and a lack of accent (Brassai 2011 : 213; for discussion, see Varga 2005). Functionally, they prepare the way for what the speaker has to convey to the listener by linking up the attentive and interpretive operations of the discourse participants (cf Brassai 2011 : 54). In contrast with the bulk (which begins with an accent), the inchoative is not an obligatory part of clause structure. However, as Brassai observes, illustrating his point at the same time, "rare is the sentence whose first word is accented" (2011 : 213).[2]

In the following example, *a gyermek* 'the child.NOM' represents the inchoative, while *játszik* 'plays, is playing' fulfills the role of the bulk.

[2] Throughout this paper, I will cite Brassai's text in my translation.

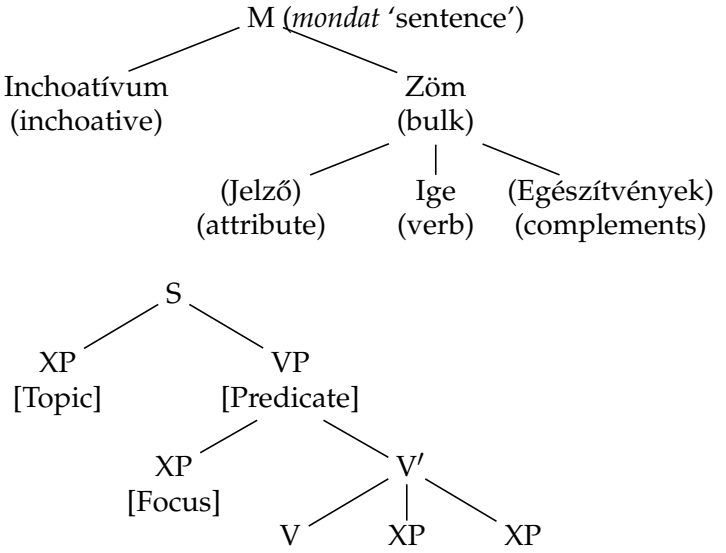
(6) A gyermek játszik.
the child.NOM plays
'The child is playing.'

More interesting examples include a transitive verb along with its nominative (*nevező* in Brassai's terminology) and accusative marked dependents (*határzók*). Brassai observes that either both dependents may be inchoatives (as in (7a)), or one of them may appear in front of the verb within the bulk (7b, c), receiving accent. He calls this dependent *jelző* ('attribute'), for reasons discussed below; for now, let us simply note that it corresponds to the "focused constituent" of generative grammar (É. Kiss 2002, Ch. 4). Finally, a third important category is that of complements (*egészítvények*), reserved for those elements which follow the verb within the bulk. An example is *a gyermeket* 'the child-ACC' as used in (7d). I have replaced Brassai's notations by the now widely accepted practice of marking foci by capitalization.

(7) a. A tanító a gyermeket dicséri.
the teacher.NOM the child-ACC praises.
'As for the teacher, as for the child, he praises him/her.'
b. A tanító A GYERMEKET dicséri.
'As for the teacher, it is the child that he praises.'
c. A gyermeket A TANÍTÓ dicséri.
'As for the child, it is the teacher who praises him/her.'
d. A tanító dicséri a gyermeket.
'The teacher praises the child.'

The most influential interpretation of Brassai's syntactic work in contemporary Hungarian linguistics is due to Katalin É. Kiss. For her, Brassai is a precursor to generative grammar, and his syntactic model is basically identical with modern accounts developed in a generative framework (cf É. Kiss 2005, 2008a). In fact, she even suggests in her 1987 monograph that "the S-structure to be assigned to Hungarian sentences in this book is a more formal and more elaborate version of Brassai's proposal" (1987 : 36). In É. Kiss (2005), the analogy is brought out by the following tree structures, with the one in (8a) attributed to Brassai.

(8)



Judging by (8a), one is led to believe that Brassai's conceptualization of the clause is strictly constituency-based. On this interpretation, not only did he pioneer the study of information structure (predating Gabelentz 1869), he also applied the methods of phrase structure grammar several decades before Bloomfield and Hockett. This is not an unreasonable assumption, as the notion *zöm* 'bulk' clearly denotes a unit which is larger than the word but smaller than the sentence (in fact, the synonym for the term is *fő rész* 'main part', cf Brassai 2011 : 215). Hence, it is naturally construed as implying a hierarchy of constituents standing in part–whole relations.

More generally, Brassai's wordings often support such an interpretation. In the analysis of (7b), he remarks that "one dependent is an inchoative, the other an attribute and as such *makes up* the bulk of the sentence together with the verb" (Brassai 2011 : 253, emphasis added). The Hungarian word for 'makes up' is *alkotja,* which has strong connotations of "building blocks" contributing to a larger structure. On the following page, we read that "in the majority of cases, the inchoative *consists of* dependents, and often not only one but more of them, although exceptionally, the verb on its own may also fulfill this service" (Brassai 2011 : 254, emphasis added). Here, the Hungarian word for 'consists of' is *áll valamiből,* which again conjures up associations of two or more elements being put together to form a larger constituent.

However, it is important to note that the PS-tree in (8a) is absent from Brassai's work; it reflects É. Kiss's interpretation of Brassai rather than Brassai's intentions in a pure and original form. In the following section, I will offer an alternative account by which Brassai has more to share with DG than the rival tradition. To put it more emphatically, he is a dependency grammarian.

4 Brassai as a dependency grammarian

The case that Sámuel Brassai is more reasonably viewed as a dependency grammarian than as a phrase structure grammarian will be made here in three steps. First, I will invite Brassai to speak for himself, citing his elaborate social network metaphor which reads almost like a manifesto of dependency grammar. Second, I will take another look at his syntactic model of Hungarian, and note the predominance of categories pertaining to word-to-word relations (dependencies). Third, I will argue that the bulk, an exception to the claim just made, is more naturally interpreted as a catena (cf §2) than as a constituent.

In §2, I mentioned some of the general properties of dependency trees. Before we return to Brassai's text, it will be helpful to list them again, this time in a classic formulation. According to Robinson (1970 : 260),[3]

(9) In any well formed string:
   a. one and only one element is independent;
   b. all others depend directly on some element;
   c. no element depends directly on more than one other.

Now consider the following passage from Brassai:

> Sitting at the beginning, middle, or end of the sentence, wherever it pleases him, is the monarch, the verb, related by meaningful bonds to its vassals, the dependents. [. . .] The rule of the verb is no dictatorship, and its vassals are no slaves but have lawful relations to their lord and to one another; they each possess a degree of autonomy and a certain rank, with a feudalism whose slogan, just as in history, is *nulle terre sans seigneur* [no land without a lord] (Brassai 2011 : 48).

[3] A fourth requirement has been left out as it is irrelevant for the present discussion.

This elaborate conceptual metaphor uses the source domain of FEUDALISTIC SOCIETY to access the target domain of SENTENCE STRUCTURE.[4] When the implications of this metaphor are carefully explored, it becomes evident that Brassai's conceptualization of the sentence follows the principles of dependency grammar. Specifically, the following mappings can be established between the source and target domains.

table 1: Brassai's social network metaphor explored

	FEUDALISTIC SOCIETY (source domain)	SENTENCE STRUCTURE (target domain)
1	the monarch is the unique supreme leader	the verb is the unique undominated node
2	asymmetrical social relationships between lords and vassals	asymmetrical word-to-word relations (dependencies)
3	a vassal in one relationship can act as a lord in another	a word's dependent can have dependents of its own
4	each vassal is directly subordinated to only one lord	each word is immediately dominated by only one other word (its head)
5	a lord can have more than one vassal	a head can have more than one dependent
6	"nulle terre sans seigneur"	no word is unconnected, no word is outside of syntactic structure
7	no unique nodes for social groups	no unique nodes for phrases

What is striking is that this is not just a random list of properties; rather, there is a vision behind the metaphor that guides Brassai's understanding of the sentence. One issue that Brassai may not have contemplated much is whether unique nodes are necessary for syntactic phrases. However, it is clear that his model of feudalistic society requires no separate nodes for groups consisting of a lord and his vassals; rather, groups like these are *emergent* entities implied by a network of interpersonal relations. By the same token, sentence structure can be seen as a network of word-to-word relations, with units above the word level corresponding to subnetworks rather than individual nodes.

[4] For the notions "conceptual metaphor", "source domain" and "target domain", see, eg Lakoff & Johnson (1980) and Kövecses (this volume).

The passage above comes from Brassai's introductory chapter in which he lays down the foundations for subsequent investigations. It is not inconceivable that once he gets as far as the details of Hungarian word order, he abandons this conceptual metaphor, and begins to analyse sentences in terms of phrase structure, ie the interpretive model behind (1b) is replaced by the one behind (1a). However, I find this scenario highly unlikely. Rather, under the assumption that Brassai's work is coherent, one would hope to demonstrate that his account of Hungarian syntax is consistently dependency-based. Let us now consider this possibility.

The list of categories Brassai uses for describing Hungarian word order is repeated below for convenience, with the corresponding notions of modern grammatical theory.

table 2: Brassai's terminology for describing word order

Brassai's term	**literal or usual translation**	**modern equivalent**
ige	verb	verb
(ige)határzó	adverbial	verb s dependent
jelző	attribute	(structural) focus
egészítvény	complement	post-dependent
(mondat)zöm	bulk (of the sentence)	comment or predicate
inchoatívum	inchoative, initial part	topic

To begin, it is remarkable that the only word class Brassai uses heavily is that of the verb; concepts like 'noun' or 'noun phrase' play no role in his account of word order. This is in line with the vision of dependency grammar that sees the finite verb as the root node of the sentence, and interprets all other elements in terms of relational categories. From a DG perspective, what is significant about *a gyermek* 'the child' in *A gyermek játszik* 'The child is playing' is not that it is a noun phrase (or determiner phrase) but rather the fact that it relates to the verb as its subject.

Also highly compatible with DG is Brassai's insistence that the verb's dependents, including the subject (which he calls *nevező* 'nominative' to avoid confusion with the logical interpretation of subjects), are all on an equal footing as far as their basic structural contribution is concerned, cf Brassai (2011 : 48, 102). Although the nominative is first among the equals, it is a dependent of the verb nevertheless, just as Tesnière (1959) would later argue in his seminal work. This intuition is expressed by the term *igehatározó*, whose modern-day equivalent is 'a verb's dependent' rather than 'adverbial' as suggested by the more familiar use of the term in Hungarian linguistics. Brassai (2011 : 49) distinguishes between adverbials in the nar-

row traditional sense, and the category of *igehatárzók*, which also includes nominative and accusative marked dependents.

Third is the controversial category *jelző* 'attribute' linked to a unique preverbal position within the bulk of the sentence. For example, in (10) below, *a gyermek* 'the child.NOM' serves as an attribute.

(10) A GYERMEK játszik.
the child.NOM plays
'It is the child who is playing.'

The motivation for the term is that according to Brassai, the accented nominative marked dependent in (10) "bears the same relationship to the verb as an adjective does to a noun" (2011 : 208–209). I will not go into his reasons for the analysis, suffice it to say that the content of Brassai's proposal can be debated, eg the restriction that only one attribute can appear in front of the verb (Brassai 2011 : 262) is hardly explained by the parallel with adjectival attributes. However, what is more crucial for the argumentation here is that *jelző* 'attribute' denotes a type of *word-to-word relation.* Whereas generative accounts interpret foci as linguistic objects appearing in Spec,FP (É. Kiss 2002 : 86), or at best as a meronymic relation (ie something can be the focus of the sentence but not the focus of the verb), Brassai proposes that being a *jelző* amounts to standing in a specific kind of relationship with the verb. For a new proposal along the same lines, see Imrényi (2009, 2010, 2012).

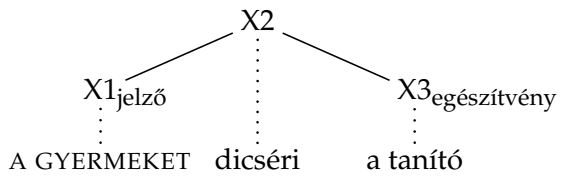
Both *jelző* 'attribute' and *egészítvény* 'complement' are positional subclasses of *határzó* 'dependent'. As Brassai remarks, "an attribute is a dependent placed in front of the verb, and a complement a dependent placed behind it" (2011 : 262). The best match for *egészítvény* is thus 'post-dependent' (cf Hudson 2007 : 161, 165), since Brassai makes no distinction between complements and adjuncts in the modern sense.

So far, then, all of the categories have been found to conform to DG principles. The root node is the verb, and its dependents within the bulk are divided into *jelző* (a single pre-dependent) and *egészítvények* (post-dependents). For example, the sentence in (11) may receive the analysis in (12).[5]

[5] I simplify the tree by ignoring the dependency between the determiner and the noun. Whether the noun or the determiner is the head in this relationship is a matter of controversy in dependency grammar.

(11) A GYERMEKET dícséri a tanító.
the child-ACC praises the teacher.NOM
'It is the child that the teacher praises.'

(12)



Finally, we have arrived at the most challenging aspect of Brassai's model for the view that he is a dependency grammarian, viz his division of the clause into inchoative and bulk. In §3, we saw that some of Brassai's passages might be construed as implying constituent structure. This time, I will cite some more passages that reaffirm his commitment to the principles of dependency grammar.

The first excerpt comes from the very first section in his treatise to address the word order of dependents. The question he seeks to answer is the following:

> Is there any dependent of the verb [*igehatárzó*] that must be placed first? In other words, is there a rule by which some dependent of the verb is entitled or indeed required to occupy the very first position in the sentence on account of its form or meaning, its relation to the governing verb or to the function of the clause? (Brassai 2011 : 51)

This passage makes it clear that the element to be identified as an inchoative is a dependent of the verb. Having established a strongly verb-centred model of syntactic structure ("a sentence consists of a verb and its associated dependents", Brassai 2011 : 48), Brassai is looking for patterns in the placement of dependents. Significantly, under Brassai's assumptions, at no point does a dependent functioning as inchoative *cease to be subordinated* to the governing verb. In contrast with proposals in generative grammar, whereby a verb's complement may be extracted from the VP and end up in a hierarchical position above it (É. Kiss 2002 : 13), Brassai of course makes no use of transformations. His "inchoative" is special only on the horizontal axis (linear order), not on the vertical dimension of dominance.

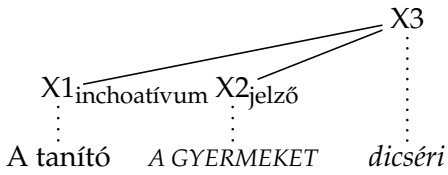
This interpretation is fully confirmed at a later point where Brassai has already introduced the concepts *jelző* 'attribute' and *egészítvény* 'complement'/'post-dependent' as well as *inchoatívum* 'inchoative'/'topic.' After a description of the strong ties of attributes and post-dependents to the

verb, he continues with the following remark. (Note that the section under study is devoted to sentences consisting only of a verb and a nominative dependent.)

> More loose is the relationship between the nominative dependent and the verb in complete or bipartite clauses (consisting of an inchoative and a bulk). However, even here, the nominative does not renounce its verb-modifying character. Whether it is an attribute, a complement, or an inchoative, in all cases it is a dependent of the verb, assuming its place in the rank of other elements of this kind. (Brassai 2011 : 215)

When no extra assumptions are made, these passages overwhelmingly support the following DG analysis of (7b), intended as a reconstruction of Brassai's proposal.

(13)



In (13), *A GYERMEKET dicséri* 'it is the child that he/she praises' is not a phrase (constituent) as it does not include all the nodes dominated by the verb (cf (3)). However, it is still a unit of dependency grammar; namely, a catena (cf (4)), here signaled by italics. On this interpretation, Brassai's *mondatzöm* 'bulk of the sentence' is simply the name for a *catena of elements* making up the comment part of the clause. The analysis crucially allows the inchoative to maintain its status as a dependent of the verb (a key aspect of Brassai's proposal) despite not belonging to the bulk. This seems to be a more natural reconstruction of Brassai's views than (8a), which has no explanation for how a dependent of the verb will end up outside the phrase of its head in a monostratal model.

Somewhat problematically, Brassai's *inchoatívum* does not necessarily denote a type of relation to the verb, contrary to what (13) implies. As a previous quote makes it clear, the motivation for the clause-initial position of an inchoative may lie in its relation to the function of the clause rather than its relation to the governing verb (Brassai 2011 : 51). The issue can be resolved by the assumption that *inchoatívum* is a label assigned to each catena serving as topic (note that even single words may count as catenae under (4)) rather than a name for a type of dependency. Under this view, Brassai's concepts can be divided into the following groups:

(14) a. dependencies relevant for morphology: nominative (*nevező*), accusative, etc (not signaled on the D-trees in this paper)
b. dependencies relevant for word order: attribute (*jelző*), post-dependent (*egészítvény*)
c. catenae relevant for word order: inchoative (*inchoatívum*), bulk (*mondatzöm*).

5 Summary and conclusions

In this paper, I have challenged one aspect of Brassai's interpretation as a precursor to generative grammar (É. Kiss 2005, 2008a), the view that his division of the sentence into inchoative and bulk amounts to an implicit early adoption of phrase structure grammar. Highlighting Brassai's elaborate conceptual metaphor in which SENTENCE STRUCTURE is accessed via the source domain of FEUDALISTIC SOCIETY, I have argued that both his theory and practice are informed by the principles of dependency grammar. Brassai's key concepts in his account of Hungarian word order either categorize word-to-word relations (dependencies), as do *jelző* 'attribute' and *egészítvény* 'complement'/'post-dependent', or they may be interpreted in terms of a type of unit called "catena" (Osborne & Groß 2012), defined over a dependency tree. In particular, the "bulk of the sentence" (*mondatzöm*) is more naturally viewed as a catena than as a constituent, given Brassai's stance that inchoatives are dependents of their governing verbs, appearing in the same rank as attributes and complements.

The argument could in fact go further than this; other aspects of Brassai's work are also conceptually very far from generative grammar. For example, the function of inchoatives is described by Brassai (2011 : 54) with an emphasis on what cognitive linguists call intersubjectivity and construal (cf Sinha 2001, Tomasello 2003, Langacker 2008), in sharp contrast with generativist appeals to logical structure (É. Kiss 2008b). Even more fundamentally, Brassai regards inductive methods as the sole reliable basis of scientific inquiry (Brassai 2011 : 16–23), which is emphatically denied by (much of) generative grammar. However, while there are good reasons to reject Brassai's one-sided interpretation as a precursor to the generative enterprise, the fact that his results inspire linguists of all theoretical persuasions is a favourable situation. It is also a positive sign that good linguistics, and its appreciation, can sometimes bridge the gap between schools of very different ideals and commitments.

REFERENCES

Blevins, James P. and Ivan Sag. to appear. Phrase structure. To appear in: den Dikken, Marcel (ed.), *The Cambridge Handbook of Generative Syntax.* Cambridge: Cambridge University Press. Retrieved on 25 November 2012 from lingo.stanford.edu/sag/papers/psg-final.pdf.

Brassai, Sámuel. 2011 [1860–1863]. *A magyar mondat.* [The Hungarian sentence.] Edited by László Elekfi and Ferenc Kiefer. Budapest: Tinta.

Chomsky, Noam. 1965. *Aspects of the theory of syntax.* Cambridge, MA: The MIT Press.

Chomsky, Noam. 1995. *The Minimalist Program.* Cambridge, MA: The MIT Press.

É. Kiss, Katalin. 1987. *Configurationality in Hungarian.* Dordrecht: Reidel.

É. Kiss, Katalin. 2002. *The syntax of Hungarian.* Cambridge: Cambridge University Press.

É. Kiss, Katalin. 2005. Brassai Sámuel és a generatív magyar mondatszerkezet. [Sámuel Brassai and the generative analysis of Hungarian sentence structure.] In: János Péntek (ed.), *A nyelvész Brassai élő öröksége.* [The living heritage of Brassai the linguist.] Kolozsvár: Erdélyi Múzeum Egyesület. 11–20.

É. Kiss, Katalin. 2008a. A pioneering theory of information structure. *Acta Linguistica Hungarica* 55 : 23–40.

É. Kiss, Katalin. 2008b. Topic and focus: two structural positions associated with logical functions in the left periphery of the Hungarian sentence. *Acta Linguistica Hungarica* 55 : 287–296.

Gabelentz, Georg von der. 1869. Ideen zu einer vergleichenden Syntax. *Zeitschrift fur Völkerpsychologie und Sprachwissenschaft* 6 : 376–384.

Hudson, Richard. 2007. *Language networks. The new Word Grammar.* Oxford: Oxford University Press.

Imrényi, András. 2009. Toward a unified functional account of structural focus and negation in Hungarian. *Acta Linguistica Hungarica* 56 : 342–374.

Imrényi, András. 2010. A dependency-based account of Hungarian structural focus. *Jezikoslovlje* 1–23.

Imrényi, András. 2012. Inversion in English and Hungarian: comparison from a cognitive perspective. In: Chris Hart (ed.), *Selected papers from UK-CLA meetings.* Vol. 1 : 209–228. Retrieved on 25 November 2012 from uk-cla.org.uk/files/proceedings/Imrenyi.pdf.

Lakoff, George and Mark Johnson. 1980. *Metaphors we live by.* Chicago: The University of Chicago Press.

Langacker, Ronald W. 2008. *Cognitive grammar: a basic introduction.* Oxford: Oxford University Press.

Mel'čuk, Igor. 1988. *Dependency syntax: theory and practice.* Albany: State University Press of New York.

Nivre, Joakim. 2005. *Dependency grammar and dependency parsing* (MSI Report 05133). Technical report, Vaxjo University. Retrieved on 25 November 2012 from stp.lingfil.uu.se/∼nivre/docs/05133.pdf.

O'Grady, William. 1998. The syntax of idioms. *Natural Language and Linguistic Theory* 16 : 79–312.

Osborne, Timothy. 2005. Beyond the constituent: a dependency grammar analysis of chains. *Folia Linguistica* 39 : 251–297.

Osborne, Timothy. 2006. Shared material and grammar: toward a Dependency Grammar theory of non-gapping coordination for English and German. *Zeitschrift für Sprachwissenschaft* 25 : 39–93.

Osborne, Timothy and Thomas Groß. 2012. Constructions are catenae: Construction Grammar meets Dependency Grammar. *Cognitive Linguistics* 23(1): 163–214.

Robinson, Jane J. 1970. Dependency structures and transformational rules. *Language* 46 : 259–285.

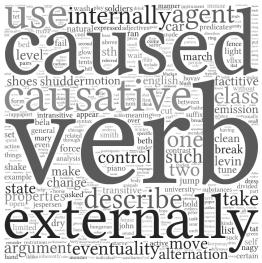
Sinha, Chris. 2001. The epigenesis of symbolization. In: Christian Balkenius, Jordan Zlatev, Hideki Kozima, Kerstin Dautenhahn, and Cynthia Breazeal (eds.), *Modeling cognitive development in robotic systems.* Lund University Cognitive Studies 85 : 85–95.

Tesnière, Lucien. 1959. *Éléments de syntaxe structurale.* Paris: Klincksieck.

Tomasello, Michael. 2003. *Constructing a language: a usage-based theory of language acquisition.* Harvard University Press.

Varga, László. 2005. Brassai Sámuel és kortársai a magyar mondat hangsúlyozásáról. [Sámuel Brassai and his contemporaries on the stress pattern of Hungarian sentences.] In: János Péntek (ed.), *A nyelvész Brassai élő öröksége.* [The living heritage of Brassai the linguist.] Kolozsvár: Erdélyi Múzeum–Egyesület. 30–39.

András Imrényi
imrenyi.andras@gmail.com
Department of Hungarian Philology
Jagiellonian University, Cracow



Internal and External Causation

Béla Korponay and Ildikó Nagy

In their book *Unaccusativity* (1995) Levin and Rappaport Hovav make the illuminative distinction between internal and external causation. In their analysis verbs like *break* and *open* describe eventualities that are under the control of some external cause that brings such an eventuality about. Such intransitive verbs have transitive uses in which the external use is expressed as subject. On the other hand, verbs like *laugh, play,* and *speak* do not have this property. The eventuality each describes "cannot be externally controlled" but "can be controlled only by the person engaging in it" (Smith 1970 : 107). Smith takes the lack of a causative transitive use for these and other verbs to be the reflection of the presence of "internal control":

> Mary shuddered.
> *The green monster shuddered Mary.
> The green monster made Mary shudder.

Levin and Rappaport Hovav distinguish between internally and externally caused eventualities. In their analysis, with the intransitive verbs describing an internally caused eventuality, some property inherent to the argument of the verb is "responsible" for bringing about the eventuality. For agentive verbs such as *play* and *speak,* this property is the will or volition of the agent who performs the activity. However, internally caused verbs need not be agentive. For example, the verbs *blush* and *tremble,* which take inanimate arguments, can be considered to describe internally caused eventualities, because the eventualities arise from internal properties of the arguments, typically an emotional reaction. These verbs exemplify that neither trembling nor blushing is generally under the person's own control.

The notion of external causation can be extended to a class of non-agentive single argument verbs that can be referred to as verbs of emission. These verbs can be divided into four subclasses:

1. Sound: burble, buzz, clang, crackle, hoot, hum, jingle, moan, ring, roar, whir, whistle, ...
2. Light: flash, flicker, gleam, glitter, shimmer, shine, sparkle, twinkle, ...
3. Smell: reek, smell, stink
4. Substance: bubble, gush, ooze, puff, spew, spout, squirt, ...

The eventualities described by such verbs come about as a result of internal physical characteristics of their argument. Consequently, only a limited set of things qualify as arguments of any specific verb of emission. Only embers, lights, and certain substances glow since only they have the necessary properties, and the same holds of other verbs of emission.

Unlike internally caused verbs, externally caused verbs by their very nature, imply the existence of an external cause: one agent, an instrument, a natural force, or a circumstance. Thus, consider the verb *break.* Something breaks because the existence of an external cause.

Some externally caused verbs such as *break* can be used intransitively without the expression of an external cause, but, even when no cause is specified, our knowledge of the world tells us that the eventuality these verbs describe could not have happened without an external cause.

The core class of causative alternation verbs are the verbs of change of state, which typically describe changes in the physical shape or appearance of some entity. Jespersen (1927) suggests that the class of verbs that are found in the causative alternation can be characterized as the "move and change" class, because it includes a variety of verbs of change of state and verbs of motion. The list of alternating verbs can easily be divided into two subclasses along these lines:

1. bake, blacken, break, close, cook, cool, dry, freeze, melt, open, shatter, thaw, thicken, whiten, widen, ...
2. bounce, move, roll, rotate, spin, ...

Relatively few verbs of motion participate in the causative alternation. The difference between internally and externally caused verbs is also reflected in the general pattern of selectional restrictions on the cause argument of the two kinds of verbs. For instance, only a limited set of things qualify as the arguments of any specific verb of emission, so that only embers, lights, and certain substances glow, since only they have the necessary properties; similar restrictions hold of other verbs of emission. Unlike most internally caused verbs, most externally caused verbs do not impose

restrictions on their external cause argument, taking agents, natural forces, and instruments as external cause.

It is in the nature of internally caused verbs that they are inherently monadic predicates. On the other hand, externally caused verbs are dyadic taking as arguments both the external cause and the passive participant in the eventuality. The proposed analysis of externally caused verbs predicts that there should be no externally caused verbs without a transitive variant. That is, all externally caused verbs have a causative, but not all of them have an intransitive use in which the external cause is unspecified (for example, *The baker cut the bread,* but **The bread cut*).

In English (as in other languages) adjectives are used to describe states, and not surprisingly, many alternating verbs of change of state are deadjectival, as shown by the examples, taken from Levin (1993 : 28). These deadjectival verbs can be divided into two groups, one (a) in which the verbs are zero-related to adjectives and a second (b) in which the verbs are formed from adjectives through the use of the suffix *-en*:

1. brown, clean, clear, cool, crisp, dim, dirty, dry, dull, empty, even, firm, level, loose, mellow, muddy, narrow, open, pale, quiet, round, shut, slack, smooth, sober, sour, steady, tame, tense, thin, warm, yellow, . . .
2. awaken, blacken, brighten, broaden, cheapen, coarsen, dampen, darken, deepen, fatten, flatten, freshen, gladden, harden, hasten, heighten, lengthen, lessen, lighten, loosen, moisten, neaten, quicken, quieten, redden, ripen, roughen, sharpen, shorten, sicken, slacken, smarten, soften, steepen, stiffen, straighten, strengthen, sweeten, tauten, thicken, tighten, toughen, waken, weaken, whiten, widen, worsen, . . .

What is relevant for us is that the adjectives that form the base for alternating verbs of change of state support the proposal that such verbs are externally caused. In Carlson's analysis (1977) these verbs are related to stage-level and not individual-level predicates: stage-level predicates describe temporary properties or transitory activities. They contrast with individual-level predicates, which describe permanent properties.

A language could choose to have two verbs whose meanings are the same in every respect except that one describes the eventuality as internally caused and the other externally caused. The verbs *shudder* and *shake* at first glance appear to be synonymous, but only *shake,* and not *shudder,* shows a transitive causative use. Given the differing behaviour of these verbs with respect to the causative alternation, *shake* should be externally caused and *shudder* internally caused. Things that shudder are usually thought of as having a "self-controlled" body: they include people, animals, and, by forced extension, the earth, engines, machinery, and vehi-

cles. In contrast leaves, teacups, and furniture, none of which can be said to have a "self-controlled" body, can only shake.

There are certain agentive verbs that appear in causative pairs:

The soldiers marched (to the tents).
The general marched the soldiers to the tents.
The horse jumped (over the fence).
The rider jumped the horse over the fence.
The mouse ran (through the maze).
We ran the mouse through the maze.

These verbs describe the manner in which motion takes place, contrasting with verbs of inherently directed motions like *come* and *go,* which describe the direction—but not the manner of motion.

At this point we mention a Hungarian peculiarity which may help in solving some problems. In Hungarian factitive meaning is generally expressed by morphological means, the regular factitive suffixes being *-at/-et, -tat/-tet.* These verbs, as a rule, take two agent participants (somebody is made to do something):

János meneteltette a katonákat.
'John marched the soldiers.'

The reader, we hope, will find the following list of oppositions persuasive:

alszik 'sleep' ∼ *altat* 'make sb sleep', *bízik* 'have confidence in ' ∼ *biztat* 'encourage', *bukik* 'fail' ∼ *buktat* 'fail sb', *éhezik* 'starve' ∼ *éheztet* 'starve sb', *emlékezik* 'remember' ∼*emlékeztet* 'remind sb of sth', *fekszik* 'lie in bed' ∼ *fektet* 'put to bed', *foglalkozik* 'deal with sth' ∼ *foglalkoztat* 'employ ', *fürdik* 'bathe' ∼ *fürdet* 'bathe sb', *hibázik* 'make a mistake' ∼ *hibáztat* 'blame sb for sth', *iszik* 'drink' ∼ *itat* 'make sb drink', *késlekedik* 'tarry' ∼ *késleltet* 'detain, delay', *költözik* 'move' ∼ *költöztet* 'move sb somewhere', *nyugszik* 'rest' ∼ *nyugtat* 'calm sb', *öltözik* 'dress' ∼ *öltöztet* 'dress sb', *szopik* 'suck' ∼ *szoptat* 'suck a child', *várakozik* 'wait' ∼ *várakoztat* 'keep sb waiting', *vetkőzik* 'undress' ∼ *vetkőztet* 'undress sb'

In the pairs active agentive verbs are in opposition with factitive ones.

In English there is also a small class of verbs which may be used with agentive (animate) objects: eg *John marched the solders.* The clause contains

a verb of action *march*, an actor *the soldiers*, and an initiator *John*. The above structure, however, is only used with a limited number of action verbs such as *run, work, gallop, jump*, etc. This is the reason why the sentence *We can seat twenty people in this house* sounds strange, but we think, a native speaker would understand it. Factitive meaning is usually expressed by the auxiliaries *have, make,* and *get*. Examples for the use of *have*:

I had my shoes cleaned.
I had the house painted.
I have my paper (all) written.
I had the piano tuned (yesterday).
I have my shoes mended.
I'm having my car washed.

The above factitive construction can be replaced by performative ones:

I asked someone to clean my shoes.
I ordered/asked someone to wash my car.
I asked a man to tune the piano.

In the function of have the auxiliary *get* can also be used:

I got my shoes cleaned.
I got the piano tuned.
I got my shoes mended.
I got my car washed.

In Hungarian the factitive pattern is quite regular so much so that, for example, in *építtet* a factitive suffix is added to the causative one.

REFERENCES

Carlson, Gregory N. 1977. Reference to Kinds of English. Doctoral dissertation, University of Massachusetts, Amherst.

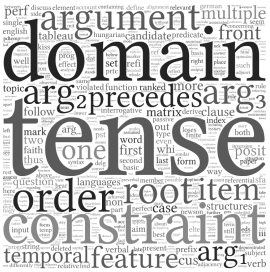
Jespersen, Otto. 1927. *A Modern English Grammar on Historical Principles. Part 3: Syntax, Second Volume.* Heidelberg: Carl Winter.

Levin, Beth. 1993. *Engish Verb Classes and Alternations: A Preliminary Investigation.* Chicago: University of Chicago Press.

Levin, Beth and Malka Rappaport Hovav. 1995. *Unaccusativity. At the Syntax-Lexical Semantics Interface.* Cambridge, MA: The MIT Press.

Smith, Carlota S. 1970. Jespersen's 'Move and Change' Class and Causative Verbs in English. In: Mohammad Ali Jazayery, Edgar C. Polomé and Werner Winter (eds.), *Linguistic and Literary Studies In Honor of Archibald A. Hill. Vol. 2: Descriptive Lingusitics.* The Hague: Mouton. 101–109.

Béla Korponay and Ildikó Nagy
ildiko.korponay@hotmail.com
University of Debrecen



Wh-questions in Syntax First Alignment

Gizella Baloghné Nagy

1 Introduction

The main topics of the present paper include the ordering of elements in interrogative strings, especially that of the wh-item and the tense morpheme; the modelling of single and multiple wh-fronting and accounting for the variation in the relative ordering of wh-items in terms of optimality-theoretic constraints.

The theoretical framework followed in the paper is Syntax First Alignment (SFA), as developed in Newson (2010) and Newson & Szécsényi (2012). According to SFA, syntax operates on conceptual units (CUs) which are either roots or functional CUs; they are ordered relative to one another and relative to domains, which are formed by CUs. The model assumes a late insertion concept: actual words are inserted only after syntactic ordering of the CUs. Constraints either define precedence/subsequence or adjacency to a CU or to a whole domain. Apart from these, faithfulness requirements are also employed to counterbalance the deletion of indexes which mark CUs as members of a domain.

On the one hand, the difference between single vs multiple wh-fronting languages has to be reflected in the analysis; on the other hand, multiple wh-questions are possible in single-fronting languages as well, and it is not entirely straightforward which of the wh-items precedes the string. These issues have been explained by the Cluster Hypothesis in the Minimalist framework (Sabel 2001, Nagy 2006). I will argue that referential properties of wh-items, argument ordering and discourse function play a role in determining the primacy of one wh-item over others in a structure.

The paper has the following structure. First, the basic word orders of English, German and Hungarian will be sketched as a point of departure. The analysis of wh-interrogatives begins with single questions discussing

the appropriate form of the constraints and the emergence of inversion in matrix clauses. Then I turn to interrogative strings containing more than one wh-element and propose constraints that derive the relative ordering of multiple wh-items correctly.

2 The basic word order of clauses: the temporal and the argument domain

As Newson (2010, this volume) extensively discusses the ordering of arguments, that of the elements of the verbal complex and the positioning of the finite verb relative to the members of a clause, here I will only briefly list the language-particular rankings, while tableaux will be presented when we reach the analysis of interrogative structures.

Throughout the paper, the types of alignment constraints in (1)–(4) will be employed. Apart from precedence and subsequence, the notion of adjacency should also be mentioned as a basic relation in SFA.

(1) x $\boldsymbol{p}$ y/x $\boldsymbol{p}$ D: x precedes CU y or a domain. In the second case, x has to precede every member of the relevant domain.

(2) x $\boldsymbol{*p}$ D: x cannot precede a domain. The element x is either located among the elements of the relevant domain or follows the domain.

(3) x $\boldsymbol{f}$ y/x $\boldsymbol{f}$ D: x follows CU or domain y.

(4) x $\boldsymbol{*f}$ D: x cannot follow a domain. The element is either located among the members of the relevant domain or precedes the domain.

2.1 English basic word order

The relevant CUs referring to verbal and temporal elements, as have been worked out for English in Newson (2010), are [tense], [perfect], [passive], and [progressive]. It can be stipulated that the tense is the first element among the verbal features. The ordering in (5) is captured by the constraint set in (6), which contains an ordered set of precedence constraints relative to the temporal domain. The constraints function as follows: if one or more of the verbal features are not present, the corresponding constraints become irrelevant, and the decision is passed over to the lower ranked ones.

(5) has [tense] been [perfect] being [progressive] done Root[passive]

(6) [tense] $\boldsymbol{p}$ D_{temp} > [perf] $\boldsymbol{p}$ D_{temp} > [progr] $\boldsymbol{p}$ D_{temp} > [pass] $\boldsymbol{p}$ D_{temp}

The position of the root among the temporal CU is defined as being second to last. This constellation can be achieved by the combination of an anti-alignment and a domain-precedence constraint. Thus, regardless of the other members of the temporal domain, the root will always take second-to-last position and get associated with the functional CU on its right in the output.

(7) Root *$\boldsymbol{f}$ D_{temp} > Root $\boldsymbol{f}$ D_{temp}

A second question concerns the position of the temporal domain as a whole: in matrix declaratives, it follows the subject and other arguments follow it, as the structure in (8).

(8) arg_1 D_{temp} arg_2 arg_3

Thus, it would seem to be reasonable to define the position of the predicate as second in the argument domain, which can be achieved by the following pair of constraints (9). This ordering produces a second-position phenomenon; the temporal domain cannot precede all the arguments but aims to precede the most of them.

(9) D_{temp} *$\boldsymbol{p}$ D_{arg} > D_{temp} $\boldsymbol{p}$ D_{arg}

The ordering of the arguments, as already discussed, is then possible to define independently of the temporal domain, as in (10). The argument domain is defined as the set of all arguments present in a given input.

(10) arg_1 $\boldsymbol{p}$ D_{arg} > arg_2 $\boldsymbol{p}$ D_{arg} > arg_3 $\boldsymbol{p}$ D_{arg}

However, if we bear in mind that topics may also appear at the front of the argument domain, the situation is not so straightforward any more. For instance, we face a problem in case of a non-subject argument topic, highlighted in boldface in (11), with question marks indicating the possible positions of the temporal domain. The fronted topic is also part of the argument domain, as it bears an argument feature. The above two

constraints would place the predicate immediately after the topic in such cases, which is obviously not the right word order in English (but would do well for German).

(11) **[topic][arg$_2$]** ? [arg$_1$] ? [arg$_3$]
topic subject non-subject argument

The generalization that would capture this situation and an unmarked declarative sentence as well, must be formulated in terms of the first argument: what is true for both cases is that the first argument precedes the temporal domain.

(12) arg$_1$ ***p*** D$_{temp}$: the first argument precedes the temporal domain.

This constraint, in combination with a lower ranked D$_{temp}$ ***p*** D$_{arg}$ can account for the second-after-subject position of the finite verbal complex in English declaratives. This way, its more general counterpart, D$_{temp}$ ****p*** D$_{arg}$, becomes unnecessary, thus it will not be represented in tableaux.

2.2 German embedded clauses

Although two different word orders have to be accounted for in German, following standard assumptions, I will take the verb-last word order found in subordinate clauses to be the underlying or unmarked one which reflects the ordering of the verbal-functional features, the matrix verb-second being the result of further constraints on matrix and non-neutral clauses (like questions, topic or focus structures). The most complex temporal domain is presented below, where the ordering of temporal CUs can be best observed. Differently from English, the progressive aspect is not expressed through verbal inflection in German.

(13)

gemacht	worden	ist
PRTC-make-PRTC	become-PRTC	is
Root[passive]	[perfect]	[tense]

In the following step, I present the group of constraints that define the relative order of verbal features among themselves (14).

(14) Root ***p*** D$_{temp}$ > [passive] ***p*** D$_{temp}$ > [perfect] ***p*** D$_{temp}$ > [tense] ***p*** D$_{temp}$

The next issue is to discuss the position of the whole temporal domain: in an embedded environment, the verbal complex is the final element in the string, as shown schematically in (15). It does not only follow arguments but also adjuncts and all other possible material belonging to the input of the string. Thus, the position of the verbal domain has to be defined as in (16), in relation to the predicate domain, which contains all the CUs that are associated with a given predicate in the input.

(15) arg_1 arg_2 arg_3 temp temp

(16) D_{temp} *f* D_{pred}

2.3 Hungarian

In present and past tense, the ordering of the tense feature and the verbal root is apparent, as the bound tense morpheme attaches to the right side of the root. In unmarked cases, the preverbal prefix is located to the left of the root (17); it is treated here as a feature of perfectivity as in É. Kiss (2002), but not part of the temporal domain. In inversion structures, the tensed verb switches sides with the verbal prefix, as in (18).

(17)

János$_{top}$	el-	ment
John	away	go-PST
[topic]	prefix	Root[tense]

(18)

PÉTER	ment	el
PETER	go-PST	away
[focus]	Root[tense]	prefix

Constraints (19)–(22) reflect the above observations. The root-tense ordering is achieved by (19). To ranking of the adjacency constraints is of importance: in cases when both the root and the prefix precede the tense morpheme, the root has to stay closer to it. The adjacency requirement of the prefix is also fulfilled, when it follows the finite verb.

It has to be noted that the adjacency requirement concerning the verbal root and the temporal domain is not an ad hoc constraint but is supposed to be present in the ranking of other languages as well. As I do not intend to go into unnecessary details regarding the temporal domain in this paper, I will mention it only in connection with Hungarian.

(19) Root ***p*** D_{temp}: the verbal root precedes the temporal domain.

(20) Root ***a*** [temp]: the root is adjacent to the members of the temporal domain.

(21) Prefix ***p*** D_{temp}: the prefix precedes the temporal domain.

(22) Prefix ***a*** D_{temp}: prefix is adjacent to the temporal domain.

(23) Root ***p*** D_{temp} > Root ***a*** [temp] > Prefix ***p*** D_{temp} > Prefix ***a*** D_{temp}

When relating the arguments and the predicate, it can be observed that in clauses without discourse-marked elements, the verb precedes all arguments in the default case.

(24) D_{temp} ***p*** D_{arg}: violated by every member of the argument domain which precedes any member of the temporal domain.

Moreover, the argument domain in Hungarian does not seem to be ordered: the postverbal order of arguments is free; therefore, I will assume that the argument alignment constraints are ranked on an equal level.

(25) arg_1 ***p*** D_{arg}, arg_2 ***p*** D_{arg}, arg_3 ***p*** D_{arg}

3 Single questions

After having laid down the basics of the analysis, let us turn to interrogative structure containing one [wh] feature. Two substantial issues arise in connection with wh-structures which will be considered in the analysis. The first one concerns the proper form of the constraints in order to be able to derive both single and multiple wh-fronting languages. In former optimality theoretic literature, the account of Ackema and Neeleman has a similar aim. They propose the constraints in (26) and (27): Q-Scope is responsible for multiple wh-fronting, as the criterion is defined from the point of view of the wh-item, whereas the other constraint, Q-Marking, is formulated from the perspective of the clause, from which results that it can be fulfilled by a single wh-item as well (1998 : 16–17).

(26) Q-Scope: [+Q] elements must c-command VP at surface structure.

(27) Q-Marking: A question must be overtly Q-marked.

The same effect could also be achieved by alignment constraints. The most straightforward idea would be to posit a wh-precedence constraint of the form demonstrated in (28).

(28) wh ***p*** D_{pred}: the [wh] CU precedes the predicate domain. Violated by every member of the predicate domain which precedes [wh].

This formulation corresponds to the idea of Q-Scope, because it would front all nominal domains containing the wh-feature, as the constraint is one concentrating on the feature itself; thus it will assess every wh-feature with respect to its position. This form of the constraint is presumably operative in languages with multiple wh-movement, like Hungarian.

Another option is to look at the situation from the perspective of the predicate domain: in case of an interrogative predicate, its domain has to be preceded by a [wh] feature, or in other words, it has to follow a [wh] feature. Here, the constraint focuses on the position of the predicate domain, which means that the requirement is satisfied if the domain is preceded by one relevant feature, regardless of the fact how many such features are present in the string.

(29) D_{pred} ***f*** wh: the predicate domain has to be preceded by a wh-feature. Violated when no [wh] CU precedes the predicate domain in an input string which contains wh-features and an interrogative-marked predicate.

The second question concerns the position of the finite tense in matrix interrogatives. In all of the languages in question the wh-phrase is directly adjacent to a verbal element in a matrix clause, either to the lexical verb or to an auxiliary. Although inversion is not restricted to interrogative structures, this phenomenon deserves our attention, too. I propose the existence of a constraint which forces the finite tense CU in a matrix clause to be dislocated from the temporal domain and appear in second position.

This lends itself to the question whether it is justified to differentiate between the tense feature in matrix and embedded structures: in my view, it needs to be included in the input, as the nature of the tense morpheme has an effect on vocabulary insertion. If one thinks about the sequence of tenses, it becomes clear that the form of an embedded tense feature is not only determined by its own form but also by the tense in the corresponding

matrix clause. Thus, the vocabulary also makes a distinction between "dependent" and "independent" tense features; therefore they must receive some kind of marking in the input.

The matrix tense constraints are assumed to be ordered as in (30), which, again, derives a second-position phenomenon. The matrix [tense] feature must be as close to the front of the predicate domain as possible, but it cannot precede it. This way, the matrix [tense] CU loses its adjacency to the rest of the temporal domain in the majority of cases.

(30) $\text{tense}_{\text{matrix}}$ $*\boldsymbol{p}\ \text{D}_{\text{pred}} > \text{tense}_{\text{matrix}}\ \boldsymbol{p}\ \text{D}_{\text{pred}}$

On the basis of the above, it can be stipulated that the tense feature sometimes loses its marker which connects it to the temporal domain, as it appears to be behaving differently from the other domain members. If the system enables the deletion of indexes, it should also be constrained to avoid its excessive application. The general form of the relevant faithfulness constraint is given in (31), while the specific formulation concerning the temporal domain is as (32).

(31) Faith(DM): violated by an input domain marker which is not in the output. (Newson, this volume)

(32) Faith(DM_{temp}): violated by an input temporal domain marker which is absent in the output. (Abbreivated as Faith in the tableaux.)

In the following, it will be briefly reviewed whether one of the wh-constraints and the three constraints on verb-second can derive the desired structures in the languages under discussion, ie (i) uniform verb-second in German; (ii) inversion in matrix wh-clauses with the exception of subject questions in English; (iii) side-switching of the tensed verb and the verbal prefix in Hungarian interrogatives.

The effects of the tense alignment and faithfulness constraints can be observed in tableau 1, containing a German matrix interrogative. In candidate (a), the tense feature is dislocated from the temporal domain and its index becomes deleted. This way the rest of the temporal domain still follows the argument domain, thus $\text{D}_{\text{temp}}\ \boldsymbol{f}\ \text{D}_{\text{pred}}$ is satisfied. Candidate (b) with no deleted domain marker, which has the same ordering of CUs as candidate (a), loses on $\text{D}_{\text{temp}}\ \boldsymbol{f}\ \text{D}_{\text{pred}}$, as does candidate (c), in which the temporal domain sticks together. Candidate (d) illustrates the embedded word order, ruled out by the constraint $\text{tense}_{\text{m}}\ \boldsymbol{p}\ \text{D}_{\text{pred}}$ demanding the

higher position of [$\text{tense}_{\text{matrix}}$]. The root has been associated with the high tense instead of the rest of the temporal domain in candidate (e): this violates the root-domain adjacency. The last candidate, (f), demonstrates the effect of the wh-precedence constraint.

tableau 1: German matrix interrogative clause

	$\text{D}_{\text{pred}}\, \boldsymbol{f}\, \text{wh}$	$\textbf{tense}_{\textbf{m}}\ {*}\boldsymbol{p}\ \textbf{D}_{\textbf{pred}}$	$\textbf{tense}_{\textbf{m}}\ \boldsymbol{p}\ \textbf{D}_{\textbf{pred}}$	$\text{D}_{\text{temp}}\, \boldsymbol{f}\, \text{D}_{\text{pred}}$	$\text{Root}_{\text{A}}[\text{temp}]$	**Faith**	$\text{Root}\ \boldsymbol{p}\ \text{D}_{\text{temp}}$	$[\text{Pass}]\ \boldsymbol{p}\ \text{D}_{\text{temp}}$	$[\text{Perf}]\ \boldsymbol{p}\ \text{D}_{\text{temp}}$	$[\text{tense}]\ \boldsymbol{p}\ \text{D}_{\text{temp}}$
☞ a.			*			*			*	
b.			*	*!			*	*	**	
c.			*	*!		*	*		*	
d.			**!***						*	**
e.			*		*!	*			*	
f.	*!	*		*		*			*	

a. [wh]arg_2 [**tense**] arg_1 arg_3 R[passive]$_t$[perfect]$_t$
b. [wh]arg_2 [[**tense**]$_t$ arg_1 arg_3 R[passive]$_t$[perfect]$_t$
c. [wh]arg_2 [**tense**] R[passive]$_t$[perfect]$_t$ arg_1 arg_3
d. [wh]arg_2 arg_1 arg_3 R[passive]$_t$[perfect]$_t$[**tense**]$_t$
e. [wh]arg_2 R[**tense**] arg_1 arg_3 [passive]$_t$[perfect]$_t$
f. [**tense**] [wh]arg_2 arg_1 arg_3 R[passive]$_t$[perfect]$_t$

A special case should also be mentioned, namely the position of the finite tense and the root in simple tenses, when the temporal domain consist of the tense feature only, as in (33). In such cases, the root does not remain in clause-final position but gets associated with the matrix tense and they are spelt out as one vocabulary item. To rule out the separated tense morpheme and the root in matrix clauses, no extra constraint needs to be introduced: the adjacency requirement between the members of the temporal domain and the verbal root is sufficient to handle this situation. In such cases, no index deletion is necessary, as the temporal domain consists of only one member, the matrix tense CU.

(33) [wh] **Root[tense]**$_t$ arg arg

In English, two different patterns emerge in matrix interrogatives. Non-subject questions involve inversion, ie the [tense] CU becomes dislocated from the temporal domain and is place between the wh-item and the first argument. As is well known, we find a different pattern in subject questions, where the tense feature stays together with the temporal domain following the subject.

To derive the former structure, the evaluation of an adjunct matrix wh-question is presented in tableau 2. Only candidates (a) and (b) with a [wh] feature in the initial position satisfy the wh-constraint. Candidate (b) fares worse on tense$_m$ ***p*** wh, as one more item, apart from the [wh] CU, precedes it. The [tense] CU is not part of the temporal domain in (a) and (c), thus its index is deleted in these instances.

tableau 2

	D_{pred} ***f*** wh	tense$_m$ ****p*** D_{pred}	tense$_m$ ***p*** D_{pred}	arg_1 ***p*** D_{temp}	Faith	D_{temp} ***p*** D_{arg}	arg_1 ***p*** D_{arg}	arg_2 ***p*** D_{arg}
☞ a.			*		*	*		*
b.			**!			*		*
c.	*!		*		*	*		*
d.	*!	*		*				*

a. wh [tense] arg_1 $[perf]_t[prog]_t$ arg_2
b. wh $arg_1[tense]_t[perf]_tR[prog]_t$ arg_2
c. arg_1 [tense] wh [perf]R[prog] arg_2
d. $[tense]_tR[perf]_t[prog]_t$ wh arg_1 arg_2

It has to be demonstrated that the system can also account for the lack of inversion in English subject interrogatives. The difference between the winning candidate (a) and clause (b) lies in faithfulness. In (b), the domain index of [tense] has been deleted, similarly to inversion structures; however, this operation proves to be unnecessary here because the members of the temporal domain are adjacent to one another. Candidates (c) and (d)

containing a detached tense morpheme fail either on faithfulness, (c), or because one more argument precedes the temporal CUs, (d), thus violating D_{temp} ***p*** D_{arg} to a greater extent than the winning candidate.

tableau 3: Subject question in English

	D_{pred} ***f*** wh	$tense_m$ ****p*** D_{pred}	$tense_m$ ***p*** D_{pred}	**arg_1 *p* D_{temp}**	Faith	D_{temp} ***p*** D_{arg}	arg_1 ***p*** D_{arg}	arg_2 ***p*** D_{arg}	arg_3 ***p*** D_{arg}
☞ a.			*			*		*	**
b.			*		*!	*		*	**
c.			*		*!	**		*	**
d.			*			**!		*	**

a. [wh]arg_1 [tense]$_t$[perf]$_t$R[prog]$_t$ arg_2 arg_3
b. [wh]arg_1 [tense] [perf]$_t$R[prog]$_t$ arg_2 arg_3
c. [wh]arg_1 [tense] arg_2 [perf]$_t$R[prog]$_t$ arg_3
d. [wh]arg_1 [tense]$_t$ arg_2 [perf]$_t$R[prog]$_t$ arg_3

In Hungarian, a multiple wh-fronting language, the functioning of the other type of wh-constraint will be assumed, ie wh ***p*** D_{pred}, that refers to every [wh] CU in a string. In addition, one of the fronted wh-items, or the only one in single questions, is immediately preverbal. This position differs from the preverbal position of the topic, as the examples (34) and (35) below demonstrate. The wh-item aims to be closer to the verbal stem bearing the tense feature, forcing the preverbal prefix to appear in postverbal position.

(34) Az ajándék-ot$_{topic}$ **oda-ad-ta** Zoli a gyerek-ek-nek.
the present-ACC PVP-give-PST Zoli the child-PL-DAT

(35) Mi-t$_{wh-item}$ **ad-ott oda** Zoli a gyerek-ek-nek?
what-ACC give-PST PVP Zoli the child-PL-DAT

Tableau 4 assesses a single argument wh-question in Hungarian with a prefix verb. As the argument ordering constraints do not play a role

in the evaluation, they are left out from the tableau — concerning argument order, only the D_{temp} ***p*** D_{arg} requirement is regarded as important, as it places the predicate before the arguments in the default case and is able to measure deviations from the basic structure. The tense-precedence constraint rules out both candidate (b), in which the prefix is preverbal and candidate (d) with a preverbal subject in addition to the preverbal wh-item. Candidate (c) with verb-initial word order loses on [tense] ***p*** D_{pred}, as the tense precedes the whole predicate domain in this case. The matrix tense can be placed closest to the front of the predicate domain if it switches sides with the prefix, as in candidate (a).

tableau 4

	[wh] ***p*** D_{pred}	[tense] ***p*** D_{pred}	[tense] ***p*** $_{pred}$	D_{temp} ***p*** D_{arg}	Root ***p*** D_{temp}	$Root_A$[temp]	Prefix ***p*** D_{temp}	$Prefix_A D_{temp}$
☞ a.			*	*			*	
b.			**!	*				
c.		*!					*	
d.			**!	*			*	

a. [wh]arg_2 Root[tense] Prefix arg_1 arg_3
b. [wh]arg_2 Prefix Root[tense] arg_1 arg_3
c. Root[tense] Prefix [wh]arg_2 arg_1 arg_3
d. [wh]arg_2 arg_1 Root[tense] Prefix arg_3

4 Multiple questions

As already discussed, the language-specific property whether all or only one wh-phrase fronts the clause can be derived by the dominance of a feature-domain or a domain-feature precedence constraint. In tableau 5 the working of the wh-precedence constraint can be witnessed through the evaluation of a Hungarian multiple question. The requirement that all [wh] features should come in front of the predicate domain is best fulfilled by candidates (a) and (c), in which the two features precede all other items. Nevertheless, [wh] ***p*** D_{pred} can never be fully satisfied if the string contains

two or more [wh] CUs, as all of them count as part of the argument domain, ie if one wh-item precedes the other, it counts as a violation. In spite of that, multiple fronting is still assessed as the best option, as in other cases (candidates (b), (d), (e)) the interrogative CUs are located further away from the initial position, which can be measured by the wh-precedence constraint due to its gradient nature.

tableau 5

	[wh] ***p*** D_{pred}	[tense] ****p*** D_{pred}	[tense] ***p*** D_{pred}	D_{temp} ***p*** D_{arg}	Root ***p*** D_{temp}	arg_1 ***p*** D_{arg}	arg_2 ***p*** D_{arg}	arg_3 ***p*** D_{arg}
☞ a.	*		**	*		*		**
b.	**!*		*			*		**
☞ c.	*		**	*		*		**
d.	**!*		*				*	**
e.	**!*	*				*		**

a. wh [wh]arg_2 Root[tense] arg_1 arg_3
b. wh Root[tense] [wh]arg_2 arg_1 arg_3
c. [wh]arg_2 wh Root[tense] arg_1 arg_3
d. wh Root[tense] arg_1 [wh]arg_2 arg_3
e. Root[tense] wh [wh]arg_2 arg_1 arg_3

Having achieved this, the next topic concerns the internal makeup of multiple questions, more precisely, which factors have an effect on the ordering of multiple wh-items in a fronted cluster, and on what grounds it is decided which of them is fronted in a single-movement type language.[1]

Interestingly, the ordering principles regarding multiple wh-items can be similar in languages with single and multiple fronting strategies, ie the cross-linguistic differences regarding these principles do not coincide with the single vs multiple movement line of division.

[1] The description of the data relies on Rudin's (1988) exhaustive study on multiple wh-movement.

4.1 Argument status

We find a clear cross-linguistic distinction across languages regarding the subject wh-item. In languages like English and Bulgarian (a multiple wh-fronting language), no other expression containing a wh-feature can precede the first argument if it is also associated with a wh-feature.[2]

(36) a. Koj kogo vidja?
who whom saw
b. Kogo koj vidja?
whom who saw

(37) Koj kakvo na kogo e dal?
who what to whom has given

(38) a. Who saw whom?
b. *Whom saw who?/*Whom did see who?

Such strict ordering is easily captured by the combination of one of the wh-precedence constraints and the ones concerning the order of the arguments and the temporal domain.

tableau 6

	D_{pred} ***f*** wh	arg_1 ***p*** D_{temp}	D_{temp} ***p*** D_{arg}	arg_1 ***p*** D_{arg}	arg_2 ***p*** D_{arg}	arg_3 ***p*** D_{arg}
☞ a. [wh]arg_1 Root[tense] arg_2 [wh]arg_3			*		*	**
b. [wh]arg_3 Root[tense] [wh]arg_1 arg_2		*!	*	*	**	
c. [wh]arg_3 [wh]arg_1 Root[tense] arg_2			**!	*	**	
d. [wh]arg_1 Root[tense] [wh]arg_3 arg_2			*		**!	*

[2] These and the following Bulgarian examples are taken from Bošković (1999).

4.2 "Optional" orders: topicality

In spite of the strict superiority of wh-subjects in English, other wh-items seem to be freer in their relative ordering, as the following examples demonstrate.

(39) a. What did Jon say to whom?
b. To whom did he say what?

(40) a. When will you do what?
b. What will you do when?

It goes without saying that in languages without superiority effects, we also find similar variation, including wh-subjects, as in the German examples in (41) and the Hungarian ones in (42).

(41) a. Wen hat wer gesehen?
who-ACC has who-NOM PRTC-see-PRTC
b. Wer hat wen gesehen?
who-NOM has who-ACC PRTC-see-PRTC

(42) a. Mi-t mikor csinálsz?
what-ACC when do-2SG
b. Mikor mi-t csinálsz?
when what-ACC do-2SG
c. Hova ki mikor utazott?
where who when travel-PST-3SG

This state of affairs needs further investigation as well, as optionality is not frequent in language; thus, the word order variants cannot be regarded as equal in meaning. Moreover, the present constraint set developed for the description of basic word order would render the variant as optimal which stands closest to the basic argument order, other orders would count as suboptimal.

This is demonstrated by tableau 7 containing a multiple interrogative, in which both of the wh-items function as arguments, represented as [wh]arg_2 and [wh]arg_3. On the basis of its grammaticality, candidate (e)

tableau 7

	D_{pred} ***f*** wh	$tense_m$ ****p*** D_{wh}	$tense_m$ ***p*** D_{wh}	arg_1 ***p*** D_{temp}	D_{temp} ***p*** D_{arg}	arg_1 ***p*** D_{arg}	arg_2 ***p*** D_{arg}	arg_3 ***p*** D_{arg}
☞ a.			*	*	*	*		**
b.			**!	*	*	**		
c.			**!		*	*		*
? d.			*	*	*	*	*!	

a. [wh]arg_2 [tense] arg_1Root[perf] [wh]arg_3
b. [wh]arg_2 [wh]arg_3 [tense] arg_1Root[perf]
c. [wh]arg_2 arg_1 [tense] Root[perf] [wh]arg_3
d. [wh]arg_3 [tense] arg_1 Root[perf] [wh]arg_2

should be assessed optimal, as well, but loses on the argument ordering constraints, as a lower argument is fronted than in sentence (a).

Newson (this volume) suggests that a fronted wh-item looses its argument domain membership, ie technically speaking, its domain marker or index will be deleted. This way, it does not violate the argument ordering constraints but still belongs to the clause, ie to the predicate domain. Although this view seems promising, we face considerable difficulties, as tableau 8 demonstrates. The relevant faithfulness constraint concerning the indexes of the argument domain is abbreviated as Faith(arg-I), and is ranked below the constraint that demands the precedence of the first argument over others. Unfortunately, the fronting of the lower argument in candidate (d) remains suboptimal to candidate (a) with a fronted arg_2. The deletion of indexes only reduces the number of violations of argument alignment compared to tableau 7.

tableau 8

	D_{pred} *f* wh	$tense_m$ * *p* D_{wh}	$tense_m$ *p* D_{wh}	arg_1 *p* D_{temp}	D_{temp} *p* D_{arg}	arg_1 *p* D_{arg}	Faith(arg-I)	arg_2 *p* D_{arg}	arg_3 *p* D_{arg}
☞ a.			*	*	*		*		*
b.			**!	*	*		**		
c.			**!		*		*		*
? d.			*	*	*		*	*!	

a. [wh]arg [tense] arg_1Root[perf] [wh]arg_3
b. [wh]arg [wh]arg [tense] arg_1Root[perf]
c. [wh]arg arg_1 [tense] Root[perf] [wh]arg_3
d. [wh]arg [tense] arg_1 Root[perf] [wh]arg_2

Another possible solution to this problem would be to consider on what other basis nominal items are ordered. It can be hypothesized that the fronted wh-item, and the first wh-item in multiple-fronting languages like Hungarian, has a topical character and therefore bears the weak topic feature, ie [about].

Imrényi discusses the structure of multiple interrogatives in Hungarian from a cognitive perspective, and calls the first of two wh-items in a Hungarian clause "topikkérő" (2012 : 156), ie "topic requesting expression", based on answer patterns of multiple questions. It is claimed that the structure of a question anticipates the structure of the answer,[3] in the case of multiple questions, the answer to the first wh-item functions as the topic of the clause, whereas the answer to second one functions as focus. These observations are translated in term of alignment in (43). The coindexation on the CUs indicates that the relevant features have to be in the same nominal expression, ie they are not adjacent by chance.

(43) $[wh_i][about_i]$ *p* [wh]: the feature combination [wh][about] precedes a [wh] feature that is not coindexed with an aboutness feature. The features [wh] and [about] have to belong to the same nominal domain, ie must be coindexed.

[3] A "kérdések szerkezete gyakran megelőlegezi a válaszmondat szerkezetét" (Imrényi 2012 : 156).

In English, the constraint should be located under arg_1 **p** D_{arg} as in tableau 9, to ensure that a wh-subject is not affected by it, ie will always be the fronted one in multiple structures. Out of the two grammatically correct candidates from the previous tableau, the constraint chooses the one in which the about-marked interrogative item is fronted.

tableau 9: Multiple argument questions

Candidates: (a), (c) *What* has Jon been saying *to whom*?
(b), (d) *To whom* has Jon been saying *what*?

	D_{pred} **f** wh	$tense_m$ ***p*** D_{wh}	$tense_m$ **p** D_{wh}	arg_1 **p** D_{temp}	D_{temp} **p** D_{arg}	arg_1 **p** D_{arg}	**[wh$_1$][about$_1$] p [wh]**	arg_2 **p** D_{arg}	arg_3 **p** D_{arg}
☞ a.			*	*	*	*			**
b.			*	*	*	*	*!	**	
c.			*	*	*	*	*!		**
☞ d.			*	*	*	*		**	

a. [wh]arg_2[about] [tense] arg_1 [perf]R[progr] [wh]arg_3
b. [wh]arg_3 [tense] arg_1 [perf]R[progr] [wh]arg_2[about]
c. [wh]arg_2 [tense] arg_1 [perf]R[progr] [wh]arg_3[about]
d. [wh]arg_3[about] [tense] arg_1 [perf]R[progr] [wh]arg_2

In German, differently from English, [wh$_i$][about$_i$] **p** [wh] overrides all the argument ordering constraints. This way it can account for the wh-object > wh-subject order in example (41a) above. The hierarchy with the constraints regulating wh- and argument order is presented in (44).

(44) D_{pred} **p** wh > **[wh$_i$][about$_i$] p [wh]** > arg_1 **p** D_{arg} > arg_2 **p** D_{arg} > arg_3 **p** D_{arg}

Although the above problem does not arise in Hungarian, as it has been assumed that the argument constraints are equally ordered, the insertion of the wh-topic constraint helps to reflect interpretational differences,

ie that different orderings correspond to inputs with distinct discourse-functional interpretation. This is illustrated by tableau 10 containing two syntactically correct alternatives, in which the $[wh_i][about_i]$ ***p*** [wh] constraint prefers the precedence of the proto-topical wh-item in candidate (a).

tableau 10: Multiple wh-question in Hungarian with a topic-marked wh-item

	[wh] ***p*** D_{pred}	**[wh_i][**$\mathbf{about_i}$**]** ***p*** **[wh]**	[tense] ****p*** D_{pred}	[tense] ***p*** D_{pred}	D_{temp} ***p*** D_{arg}	Root ***p*** D_{temp}	Root ***a*** [temp]
☞ a.	*			**	*		
b.	*	*!		**	*		

a. [wh][about] [wh]arg_2 Root[tense] Prefix arg_1 arg_3

b. [wh]arg_2 wh[about] Root[tense] Prefix arg_3

4.3 Referentiality

In the above treatment of multiple questions, both argument and adjunct wh-items has been mentioned. However, there is a type of adjunct which seems to behave differently from other clause members, ie non-referential wh-adjuncts like *how* and *why*. Languages fall into two categories according to the behaviour of non-referential wh-adjuncts: (i) in languages like English, (45), such a wh-item has to precede the other(s) regardless of their argument status; (ii) in the other group exactly the reverse situation holds, ie a non-referential wh-item can never be the first among other wh-items. The latter state of affairs is demonstrated by examples from Bulgarian, in (46), German, in (47) and Hungarian, in (48).

(45) a. **Why** has Mary kissed who?
b. *Who has Mary kissed **why**?
c. **Why** did you buy what?

(46) a. Koj **kak** udari Ivan?
who how hit Ivan
b. ***Kak** koj udari Ivan?
how who hit Ivan

(47) Wen hat Maria **warum** ge-küss-t?
who-ACC has Mary why PRTC-kiss-PRTC

(48) a. Ki **miért** rajzol-t macská-t?
who why draw-PST cat-ACC
b. ***Miért** ki rajzol-t macská-t?
why who draw-PST cat-ACC

Here again, I opt for privative instead of binary features, as they can model the complexity of structures more adequately: if a CU, carrying eg pragmatic or morphological information, is present, the expression is "bigger" than in the absence of it. A similar effect cannot be achieved by using binary features of the form [±ref]. The [ref] feature stands for the referentiality of a nominal expression; its absence means non-referentiality. Both the precedence and subsequence versions of the constraint have visible effects, it depends on the language type which of them is observed, ie ranked higher.

(49) $[wh_i][ref_i]\ \boldsymbol{p}\ [wh]$

(50) $[wh_i][ref_i]\ *\boldsymbol{p}\ [wh]$

These constraints must be fairly dominant in the constraint hierarchy in the languages under discussion, especially in English-type languages, as the referentiality constraint is assessed more important than the observation of argument order. The ranking in (51) derives languages like Bulgarian, German and Hungarian, in which non-referential wh-words cannot precede referential ones; the reverse ranking accounts for the English facts, for instance.

(51) $[wh_i][ref_i]\ \boldsymbol{p}\ [wh] \gg [wh_i][ref_i]\ *\boldsymbol{p}\ [wh]$

(52) $[wh_i][ref_i]\ *\boldsymbol{p}\ [wh] \gg [wh_i][ref_i]\ \boldsymbol{p}\ [wh]$

5 Conclusion

One of the aims of the paper has been to provide further support for the applicability of a structureless theory of grammar. With the use of alignment and faithfulness constraints a wide range of phenomena connected to interrogative structures can be accounted for, including verb positions, number and additional features of fronted wh-items. It has been demonstrated that a simple set of alignment constraints can be applied to model several dimensions of cross-linguistic variation. In sum, it can be stated that the present optimality theoretic framework yields promising results in deriving word order regularities.

REFERENCES

Ackema, Peter and Ad Neeleman. 1998. WHOT? In: Pilar Barbosa, Danny Fox, Paul Hagstrom, Martha McGinnis, and David Pesetsky (eds.), *Is the Best Good Enough? Optimality and Competition in Syntax.* Cambridge, MA: The MIT Press. 15–35.

Bošković, Željko. 1999. On multiple feature checking. In: David Samuel Epstein and Norbert Hornstein (eds.), *Working Minimalism.* Cambridge, MA: The MIT Press. 161–188.

É. Kiss, Katalin. 2002. *The syntax of Hungarian.* Cambridge: Cambridge University Press.

Imrényi, András. 2012. A magyar mondat viszonyhálózati modellje. PhD dissertation. Eötvös Loránd University, Budapest.

Nagy, Gizella Mária. 2006. Multiple questions in English, German and Hungarian. A cluster-based approach. *The Even Yearbook* 7. (seas3.elte.hu/delg/publications/even/2006.html#na)

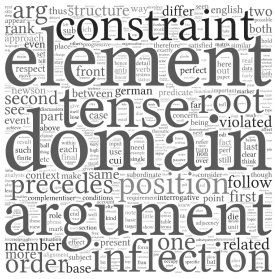
Newson, Mark. 2010. Syntax first, words after: a possible consequence of doing Alignment Syntax without a lexicon. *The Even Yearbook* 9. (seas3.elte.hu/delg/publications/even/2010.html#ne)

Newson, Mark and Krisztina Szécsényi. 2012. Dummy Auxiliaries and Late Lexical Insertion. *The Even Yearbook* 10 : 80–125. (seas3.elte.hu/delg/publications/even/2012.html#ns)

Rudin, Catherine. 1988. On multiple questions and multiple wh-fronting. *Natural Language and Linguistic Theory* 6 : 445–501.

Sabel, Joachim. 2001. Deriving multiple head and phrasal movement: The Cluster Hypothesis. *Linguistic Inquiry* 23 : 532–545.

Gizella Baloghné Nagy
grizi29@gmail.com
Department of Foreign Languages and Literature
Faculty of Primary and Pre-School Education
Eötvös Loránd University



What you can do with a domain and why they are not phrases

Mark Newson

1 Introduction

The notion of a domain was first introduced into alignment syntax in Miklós Gáspár's PhD dissertation (2005) as a device to allow precedence and subsequence relations to hold over more than two elements. It has proved extremely useful in the framework and although there has been substantial development to the notion (especially in Newson & Maunula 2006) its main purpose remains as Gáspár first envisioned. His intuition was that a wh-element, for example, does not just precede (albeit at a distance) its predicate, but that it precedes all the elements that it has scope over. Therefore with the aid of an interrogative domain, we can define a constraint which places the wh-element as its first element:[1]

(1) [WH] ***p*** ***D***$_{\text{WH}}$ the wh-element precedes interrogative domain
violated by every member of D_{WH} which precedes WH

[1] For convenience we will make use of the following conventions in defining constraints. First we will give the constraint name, which consists of three parts: the target, ie that which is positioned by the constraint; the relation, which is the type of alignment which holds of the target (precedence, represented as ***p***, subsequence, represented as ***f*** or adjacency, represented as ***a***), and the host, which is what the target is aligned to and may be a single element or a domain. Domains are indicated as D_X, where X identifies the nature of the domain. The second item in the definition of the constraint is a description of the constraint name, given for clarification purposes. The last item provides the violation conditions of the constraint and as such provides its definition.

Of course, this is exactly what a structural account does: a wh-element is at the front of the structural unit (the interrogative clause) that it has scope over, so the domains approach is not particularly novel. But this similarity in the uses of domains and structural units may lead to the sneaking suspicion that the two are identical and that domain is just another name for phrase, smuggled into a theory which is supposed to operate with linear rather than constituent structural notions.

It is the intention of the present paper to argue that the domain and structural approaches are very different and that one cannot be seen as just a notational variant of the other. The main thrust of this argument will be based on an analysis of the basic arrangement of clausal elements in English and German. This analysis not only leans heavily on the notion of domains, but in doing so provides a novel view of the organisation of clausal elements which has many properties which are substantially different from the standard phrase structure based approach. Problems and their solutions are discussed which have not, and probably could not have, arisen from the perspective of a structural organisation.

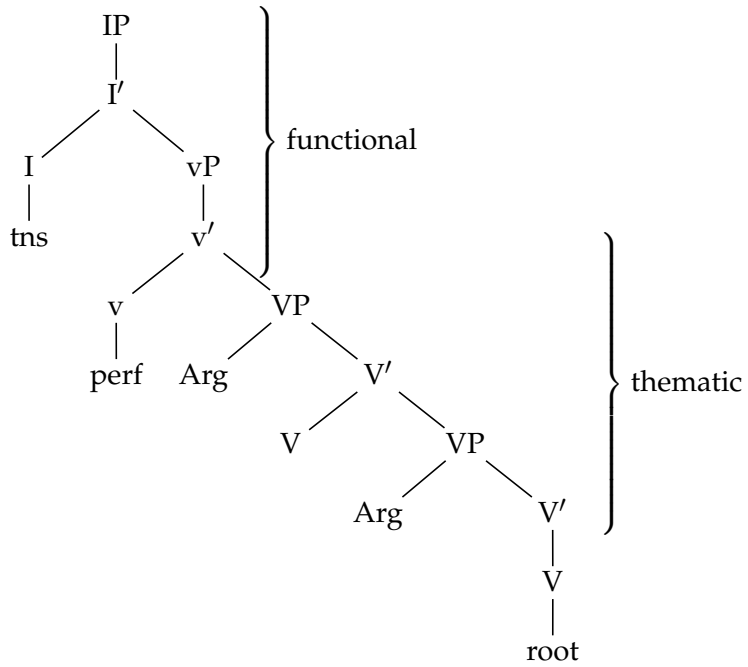
The paper is organised into seven sections. After this introduction, some superficial similarities between clause structures and domains are discussed. This serves to introduce the domains we will be basing our analysis on as well as to juxtapose the two approaches so as to highlight their differences. The following four sections detail the analysis, starting with the details of the internal organisation of the inflection and argument domains. This continues with sections which detail how the domains relate to each other and the "linchpin" function of the root. This ends with a detailed discussion and analysis of the organisational differences in German matrix and subordinate clauses and the role of the complementiser. The final section discusses possible extension of the approach to wh-phenomena, though a full analysis is not developed here. The purpose of the discussion is again to highlight differences in the structural and domain based approaches. It will be seen that although both are applicable to the same range of phenomena, they address it in very different ways.

2 Phrases and domains in the sentence

Ever since the introduction of the VP Internal Subject hypothesis (Koopman & Sportiche 1991) it has been possible to view the sentence as being organised into discrete parts, each of which has to do with distinct syntactic/semantic aspects of the sentence. The lower part, essentially the VP, has to do with thematic elements (the predicate and its arguments) and their arrangement. On top of this we have the functional structure associ-

ated with tense, modality and aspect — essentially the IP and whatever functional structure lies between the inflection and the VP. A version of this idea is depicted in (2).

(2)

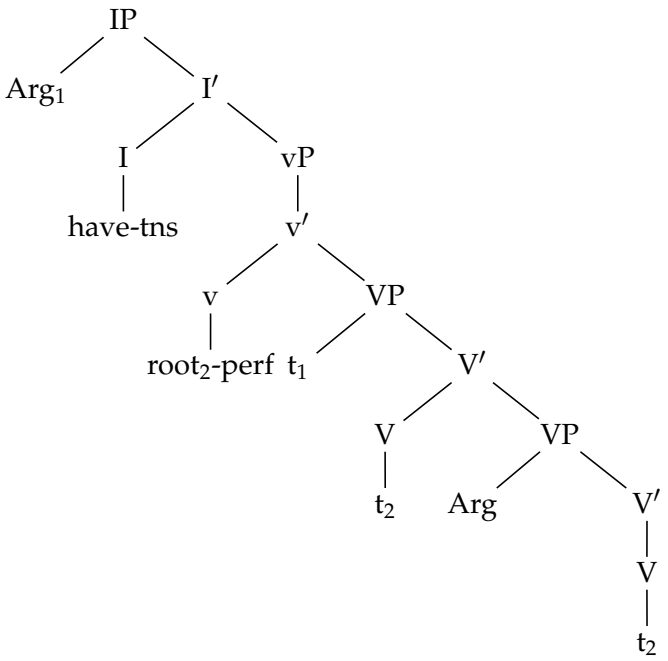


The individual elements within each part of the structure are ordered by a number of principles including subcategorisation specifications of the heads[2] and independent ordering specifications.[3] This order is subject to change by processes which serve to mingle the elements of both parts of the structure. The subject moves out of its VP internal position to the specifier of the IP, preceding all elements of the functional section of the clause, and the verb may move up into the functional elements (or some functional element may move down to the verb—depending on one's theoretical stand point). Hence we end up with something which looks like the following:

[2] For example, the inflection subcategorises for a verbal complement and so the perfect will follow tense rather than the other way round.

[3] Such as the theta hierarchy which determines the order of the arguments in the VP. See Larson (1988) for a suggestion along these lines.

(3)



We can envisage a similar analysis to this in a linear approach, making use of domains to replace the structures discussed above. For example, parallel to the notion of the VP, we might conceive of an *argument domain,* made up of all of the arguments associated with a predicate. The IP might be related to an *inflection domain,* made up of all the functional elements (modal, tense and aspectual) which modify the predicate. However, while these domains bare obvious similarities to the relevant phrases, they are quite unlike them in nature. We can best see this in terms of how the elements of each domain is organised with respect to the domain. It is important to understand how domain based alignments work in order to see this difference. Such constraints are violated by members of the domain which are not in the relevant relation to the target. Crucially, they are not violated by any element which is not a member of the domain. This fact means that domain based constraints are evaluated as though only the members of the domain are present: all other elements are simply ignored. Of course, the domains do not exist independently of all the other input elements and candidates are orderings of all input elements. However, this property of domain based constraints allows us to consider domains as though they do have independent existence. A brief example might help to clarify. Suppose we have a domain consisting of two elements *a* and *b.* These are included in an input along with another element *x* which is not a member of

this domain. Further suppose two constraints relating to this domain, one which wants a to precede the domain and the other that wants b to precede it.[4] This puts *a* and *b* into competition with each other as to which should come first and the outcome of the competition will be decided by the ranking of these constraints. Note, however, that as far as this competition is concerned, it does not matter where *x* is placed with respect to *a* and *b:*

(4)

	[a] $\boldsymbol{p}\,\mathrm{D}_{\{a,b\}}$	[b] $\boldsymbol{p}\,\mathrm{D}_{\{a,b\}}$
☞ a b x		*
☞ a x b		*
b a x	*!	
b x a	*!	
☞ x a b		*
x b a	*!	

There will be other constraints relevant for the positioning of *x*, but the point is that as far as the organisation of the domain members is concerned, we might as well ignore this element and the competition in effect reduces to the following:

(5)

	[a] $\boldsymbol{p}\,\mathrm{D}_{\{a,b\}}$	[b] $\boldsymbol{p}\,\mathrm{D}_{\{a,b\}}$
☞ a b		*
b a	*!	

Turning now to the cases of the argument and inflection domains, we see that these are organised similarly to the above simplified case. Each inflectional element competes with the others to be first in the domain, with tense, when present, preceding perfect, when present and progres-

[4] A member of a domain can precede that domain if no member of the domain precedes it. Recall that the definition of a constraint is given by its violation conditions and a domain precedence constraint is violated by every member of the domain that precedes the target. Given that an element cannot precede itself, a domain precedence constraint will be perfectly satisfied if no other member of the domain precedes the target.

sive, when present. Perfect, in turn, precedes progressive. We can represent this in the following way:

(6) ⟵ ⟵ ⟵
[tense] [perfect] [progressive]

The argument domain is similarly organised with each argument in competition with the others to precede the domain:

(7) ⟵ ⟵
[arg] [arg] . . .

These domains do not exist independently of each other in the linear string, but the ordering principles to which they are subject only consider them in isolation. However, there is interaction between the elements of both domains. This is primarily accomplished by the root, which is not a member of either domain, but is positioned with respect to both. As demonstrated in Newson (2010), the root is positioned in the second to last position within the inflection domain, always being followed by one of its members:

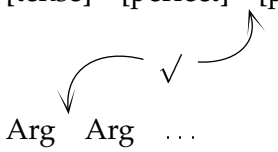
(8) $\surd$ [tense]	**play**-ed
[tense] $\surd$ [perfect]	had **see**-n
[tense] [perfect] $\surd$ [progressive]	had be-en **run**-ing

It is also a fairly straightforward observation that the root is positioned after the first element of the argument domain as the verb always follows the subject but typically precedes other arguments:

(9) Arg $\surd$	John **swam**
Arg $\surd$ Arg	John **saw** Bill
Arg $\surd$ Arg Arg	John **sent** Fred a letter

These requirements for the positioning of the verb necessarily entail that there will be some intermingling of the inflection and argument domains. We might envisage this in the following way, though it is important to bear in mind that ordering is determined in the single linear string and that at no derivational point in the process are the domains actually separated like this:

(10) [tense] [perfect] [progressive]



Due to other alignment conditions, which we will elaborate on a little later, the end result of this interaction will be:

(11)

Arg	[tense]		[perfect]	√	[progressive]	Arg
John	had	be	-en	watch	-ing	TV

The point of juxtaposing these two approaches is to point out that although there seem to be a number of similarities between them, there are also some rather large differences which make it difficult to sustain the claim that one is a notational variant of the other. For example, while both approaches identify similar elements belonging to the relevant sub-areas of the sentence, they are not identical. Specifically the phrase-based approach necessarily has the root as being part of the sub-structure containing the arguments, as it is ultimately the head of this structure. It would not make much sense from this perspective to consider the set of arguments as forming a phrase independently of the root, and to my knowledge no one has ever considered such a thing. It is easy to see why. Thematic relations which hold between a predicate and its arguments are established syntactically in the lower substructure, the assumption being that this arrangement feeds the interpretation component and the arguments are interpreted with respect to the predicate based on their position within this.[5]

From the domain base approach, however, there is nothing wrong with taking the set of arguments as forming a domain as no inconsistencies follow from this. The semantic relations are formed in the input and interpreted from this. So nothing is lost by conceiving of a domain of arguments without the predicate. Domains, not being interpreted themselves, therefore have only syntactic significance, though they may be based on the semantic relations established in the input. There is substantial evidence that the organisation of inflection and argument domains are largely inde-

[5] Other assumptions might not lead to the same conclusion. For example, in LFG argument-predicate relations are established in a non-constituent structure arrangement. Thus it would be possible to arrange things so that the arguments form a constituent separate from the root, though again, to my knowledge, this has never been proposed.

pendent of each other and, largely independent of the position of the root. For example, we can often observe changes in one domain which have no effect on the other. We can also observe changes to the position of the root which have no effect on the organisation of the domains themselves. In English, the argument domain can undergo a change which involves one of its members occupying a different position with respect to the other arguments, though this has no effect on the organisation of the inflection domain, or indeed on the position of the root. One such example concerns topicalisation:

(12)	a.	Arg1	[tense]	$\surd$ [perf]	Arg2	Arg3
		John	has	given	Barry	the bill
	b.	Arg3_{Top}	Arg1	[tense]	$\surd$ [perf]	Arg2
		the bill,	John	has	given	Barry

Note that the inflection domain and the position of the root within it are unaffected by this rearrangement of the arguments.

An even more dramatic effect can be seen in German where the inflection domain is affected by whether the clause is main or embedded and yet the argument domain remains unaffected by these changes:

(13)	a.	Arg1	[tense]	Arg2	Arg3	$\surd$ [perf]	
		Peter	hat	dem Studenten	das Buch	gegeben	
		Peter	has	the students	the book	given	
	b.	...	Arg1	Arg2	Arg3	$\surd$ [perf]	[tense]
		weil	Peter	dem Studenten	das Buch	gegeben	hat
		because	Peter	the students	the book	given	has

With a simple tense, the effect is more extreme as the root is dragged about by the tense from second to last position, yet the argument domain is unaffected:

(14)	a.	Arg1	$\surd$ [tense]	Arg2	Arg3	
		Peter	gab	dem Studenten	das Buch	
		Peter	gave	the students	the book	
	b.	...	Arg1	Arg2	Arg3	$\surd$ [tense]
		weil	Peter	dem Studenten	das Buch	gab
		because	Peter	the students	the book	gave

Despite all this variation in the inflection domain and the position of the root, the argument domain remains unaffected.

A second difference between the structural approach and the domain-based approach concerns the relationship between the two parts of the sentence. From the structural point of view, this relationship is necessarily one of subordination: the thematic part of the sentence is subordinate to the functional part. This is unavoidable as together both parts must form a single structure so one must be included inside the other. This entails two further properties of the system. Firstly that the thematic part, being the subordinate one, must be a phrase and secondly that any intermingling of the two parts that we observe must result from extra processes, such as movement. These two points are clearly related: if the thematic part of the sentence were not to be seen as a structural unit it could, in principle, be distributed amongst the functional elements by whatever principles establish order within a structure. In practise, however, it is difficult to think how by subcategorisation alone we could account for the ordering of thematic elements within the functional elements. A theory which establishes thematic relations within a single constituent and then moves elements around is therefore a more obvious one.

Within the domain based approach however, this fracturing of the syntactic system is completely unnecessary. This is so because domains are not structural units which have to be manipulated by the grammatical system. Hence it is not necessary to make one domain be subordinate to any other in order to establish a single linear ordering. All that is necessary is for input elements to be ordered with respect to certain other input elements and a single ordering of all the elements can be established without reference to where each element stands with respect to all other elements or how groups of elements stand with respect to others. From this perspective the intermingling of elements of different domains is a natural part of the ordering process.

These observations are made not with the idea in mind to favour one view over the other. It is clear that both approaches can account for the observed phenomena and there is little empirically to separate them. Therefore to favour one view over the other requires arguments of a more subtle kind, concerning which mechanisms are better for other reasons than accounting for observations. Such arguments notoriously tend to be inconclusive and ultimately reduce to personal preferences, which obviously should not be part of scientific argumentation. Until we understand more about the capabilities and limitations of these systems, it is therefore better to avoid such debates.

The real point of these observations is to argue that the domain based approach offers a real alternative to the structure base one. The domain based approach offers descriptions of linguistic phenomena which are im-

possible to even model using structure precisely because their nature is completely different: a domain is not a phrase and it does not have the same properties that phrases do. Phrases are manipulated by phrase structure grammars and therefore have distributions determined directly by the rules of these grammars. Domains are not themselves manipulated by alignment rules: their members are. Thus if a domain has a distribution that can be observed in data, this is entirely epiphenomenal.

In the next sections we will expand on the domain based analysis overviewed in this section to show how it works, what predictions it makes and the problems it has to overcome. We will start with the constraints which pertain to the individual domains and then move on to the root constraints which determine the interaction between the inflection and argument domains.

3 Inflection domain constraints

The constraints needed to order the inflection domain are the most straightforward, therefore we will deal with those first. For English it is particularly straightforward as the order of the inflectional elements does not alter under any circumstance. We therefore conclude that these constraints are highly ranked with respect to others.

We have already seen that the inflectional elements cannot be seen as aligning to a particular element, such as the root, as their order is unaffected by the conditions on root placement. Moreover, although tense is often present while the other inflectional elements are optional, even tense is not necessary in all situations; for example in Small Clauses. The absence or presence of any particular inflectional CU has very little affect on the ordering of the others however, as detailed below:

(15)

he smiled	[tense]
he had seen me	[tense] [perfect]
he was running	[tense] [progressive]
he had been thinking	[tense] [perfect] [progressive]
he was known	[tense] [passive]
he had been followed	[tense] [perfect] [passive]
he was being shown round	[tense] [progressive] [passive]
he had been being beaten	[tense] [perfect] [progressive] [passive]
(I watched) him writing	[progressive]
(I saw) the window broken	[passive]
(I heard) the door being opened	[progressive] [passive]

In general the situation can be described as follows:

(16) ([tense]) ([perfect]) ([progressive]) ([passive])

Thus, tense, when present, precedes all other inflectional conceptual units (CUs); perfect, when present, precedes all other inflectional CU, except tense; etc[6]

The fact that there is no single element to which all inflectional elements are aligned indicates that they are aligned to a domain. Their behaviour can be modelled exactly by the following kind of constraint:

(17) $[CU_I]\ \boldsymbol{p}\ D_I$ inflectional CU precedes inflection domain
violated by every member of D_I which precedes $[CU_I]$

A constraint of this form for each of the members of the domain and a ranking in accordance with (16) will give us exactly the order required, as demonstrated below:

(18)

		[tense] $\boldsymbol{p}$ D_I	[perf] $\boldsymbol{p}$ D_I	[prog] $\boldsymbol{p}$ D_I	[pass] $\boldsymbol{p}$ D_I
a.	☞ [tense]				
b.	☞ [tense][perf]		*		
	[perf][tense]	*!			
c.	☞ [tense][perf][prog]		*	**	
	[tense][prog][perf]		**!	*	
	[perf][tense][prog]	*!		**	
	[perf][prog][tense]	**!		*	
	[prog][tense][perf]	*!	**		
	[prog][perf][tense]	**!	*		

[6] Newson and Szecsényi (2012) argue that a degree inflectional CU, following all others, is necessary to account for predicate adjective constructions.

The table in (18) shows the results of three competitions. In (18a) only tense is present, and hence there is only one ordering possible. In (18b) tense and perfect are present and the winning candidate has tense preceding perfect. In (18c) there are three members of the domain present, and so more competitors. The evaluation is the same however, and tense is placed first, perfect second and progressive third.

Note that these results will hold no matter how many other elements from other domains are present or what their positions are with respect to the inflectional CUs as domain based constraints evaluate only the order of the domain members and are effectively blind to the presence of other elements. For this reason, the table in (18) represents a real situation despite the fact that it considers inflectional elements out of context. If the context were to be added, exactly the same results would hold.

If we turn our attention to the German inflection domain, we find that things are a little complicated by the differences between matrix and subordinate clauses, a complication which does not arise in English declaratives. We will take a fairly standard position on this and assume that the embedded situation in the basic one and that the order of inflections in the matrix is subject to special considerations, to which we return. In non-matrix contexts the order of inflections is exactly the opposite to those of English:[7]

(19) weil der Brief geschrieben worden ist
because the letter write-[pass] become-[perf] be-[tense]
'because the letter has been written'

Clearly we can capture this order easily enough with a different ranking of the constraints in (18). However, it is interesting that the order is not just different to the English one, but its mirror image. This might indicate a certain universality in the inflection system and therefore that there are limits on the ranking of the constraints. The easiest way to capture this is to maintain the same ranking of the inflection domain constraints but assume that it is subsequence rather than precedence which is important in German. We therefore consider a second type of constraint:

(20) $[CU_I]\,f\,D_I$ inflectional CU follows inflection domain
violated by every member of D_I which follows $[CU_I]$

[7] The auxiliary system of German also differs from that of English, having split perfect and passive systems. We will not let the details of these detain us as they are only tangential to the issue at hand.

In order to capture the German data, exactly the same ranking of the inflection domain subsequence constraints is needed as that for inflection domain precedence, as demonstrated below:[8]

(21)

	[tense] f D_I	[perf] f D_I	[pass] f D_I
[tense][perf][pass]	$**$!	$*$	
[tense][pass][perf]	$**$!		$*$
[perf][tense][pass]	$*$!		
[perf][pass][tense]		$**$!	$*$
[pass][tense][perf]	$*$!		$**$
☞ [pass][perf][tense]		$*$	$**$

The difference between German and English concerns the relative ranking of the precedence and subsequence constraints. For English precedence outranks subsequence and for German the opposite pertains. We might think therefore of a universal ranking of general ordering constraints with respect to the inflection domain and a language specific ranking of precedence and subsequence versions of them:[9]

(22) [tense] o D_I > [perf] o D_I > [prog] o D_I > [pass] o D_I universal
[CU_I] p D_I > [CU_I] f D_I English
[CU_I] f D_I > [CU_I] p D_I German

4 Argument Domain Constraints

Essentially the same analysis will be given for the ordering of the argument domain as for the inflection domain, though here the matter is complicated by the issue of distinguishing between arguments. How arguments are to be distinguished and what role their distinguishing features have in syn-

[8] German has no morphological progressive, so we omit the relevant constraint from the table here. It is an interesting question, however, of what we are to say about the treatment of the [progressive] CU in the language as, presumably, functional CUs are universal. In the interests of keeping this discussion within reasonable bounds we will not veer off down this road, but leave it to be explored at some other time.

[9] The " o " used in the following constraints stands for a general ordering (either precedence or subsequence) relationship.

tax have been the subject of a very long debate, which is still to reach its conclusion. In one view, the thematic role is the main distinguishing feature, though it is unclear still exactly what this is and therefore it is even more difficult to conclude on its role in syntax. A more recent approach has been to distinguish between arguments in terms of their involvement in event structure. As early as 1990, Grimshaw proposed that those arguments which are involved in prior events in a complex event structure occupy more prominent positions syntactically, though she coupled this requirement with a thematic hierarchy to determine the prominence of arguments associated with the same bit of event structure (1990). These days it is an optimistic hope that with a greater understanding of event structure it will be possible to do away with reference to thematic roles entirely.

Newson (2012) proposed that arguments are related to event structure by specific relating elements. These relators differ in terms of which argument they associate to which bit of the event structure. Complex events can be made up of a number of sub-events arranged in a sequence such that one sub-event precedes another. For example, a causing sub-event precedes the resulting sub-event. From this perspective we can define the different arguments by the level of the event in the event structure that they are related to. For simplicity we will refer to the argument related to the first sub-event to which an argument is related as argument 1 (Arg1) and that to the next as argument 2, etc. This means that in a transitive verb the argument related to first sub-event is Arg1 and that related to the following sub-event is Arg2. For unergatives and unaccusatives the single argument is Arg1 even though in these cases the argument is related to different parts of the event structure (the preceding one for unergatives and the following one for unaccusatives).

The ordering of the arguments in the argument domain is determined in exactly the same way as for the inflection domain: there are a set of domain precedence constraints requiring particular members of the domain to precede all others:

(23) $[CU_A]\ \boldsymbol{p}\ D_A$ argument CU precedes argument domain
violated by every member of D_A which precedes $[CU_A]$

The specific constraints require Arg1 to precede Arg2, etc, which means ranking $[\text{Arg1}]\ \boldsymbol{p}\ D_A$ above $[\text{Arg2}]\ \boldsymbol{p}\ D_A$, etc. It should be obvious without demonstration how this serves to order the arguments in the relevant way.

The basic arrangement of arguments in English and German seems to be much the same, though in German this is subject to more variation due to the affects of scrambling. This clearly involves the interference of other constraints, which we will not be concerned with in the present paper. We will, however, briefly consider other argument re-ordering effects which are present in both languages in the final section of this paper.

5 Root alignment and the interaction between argument and inflection domains

Above it was mentioned how the root plays a linchpin role in the ordering of the argument and inflection domains within the linear string. For English the root requires a second position in the argument domain and a second to last position in the inflection domain. As was initially pointed out in Newson (2010), second and second to last positions can be achieved by the ranking of an anti-precedence (or anti-subsequence) constraint above a precedence (or subsequence) one. Anti-precedence/subsequence constraints are violated in exactly the case that the precedence/subsequence constraints are satisfied. Thus if it is important for an element not to precede a domain, but it is also important to be at the front of the same domain, the best place for it is in the second position.

The positioning of the root in English clauses can therefore be accounted for by the following constraints:

(24)

$\surd$ *$\boldsymbol{p}$ D_A	root does not precede argument domain violated if all members of D_A follow $\surd$
$\surd$ $\boldsymbol{p}$ D_A	root precedes argument domain violated by every member of D_A that precedes $\surd$
$\surd$ *$\boldsymbol{f}$ D_I	root does not follow inflection domain violated if all members of D_I precede $\surd$
$\surd$ $\boldsymbol{f}$ D_I	root follows inflection domain violated by every member of D_I that follows $\surd$

With the anti-ordering constraint ranked above the ordering constraint in both cases, we will achieve the relevant position of the root with respect to each domain. However, although this ensures a certain degree of intermingling between the elements of the domains, it does not by itself guarantee the actual order, as a number of possible orderings are consistent with these rankings:

(25)

	$\sqrt{}$ *f D_I	$\sqrt{}f$ D_I	$\sqrt{}$ *p D_A	$\sqrt{}p$ D_A
Arg1 [tense] $\sqrt{}$ [perf] Arg2		*		*
Arg1 [tense] $\sqrt{}$ Arg2 [perf]		*		*
[tense] Arg1 $\sqrt{}$ [perf] Arg2		*		*
[tense] Arg1 $\sqrt{}$ Arg2 [perf]		*		*

As the grammatical order of these elements involves the elements of the inflection domain being surrounded by the elements of the argument domain, we need constraints which will pull inflectional elements towards the centre. It makes sense that inflectional elements want to be near the root. If this were not the case, they would not be "inflections" as under present assumptions a bound morpheme is one for which its vocabulary realisation is restricted to the immediate context of the root. We can see then that the constraints relevant for achieving the required ordering are ones which place inflectional elements as close to the root as possible: ie adjacency constraints. Root adjacency is not an absolute requirement of English inflectional elements and they are realised as free morphemes (ie by dummy auxiliaries) under the right conditions. Thus these adjacency constraints are not so highly ranked, and come at least below the ordering constraints. The important point however, is that the root adjacency requirement for inflections is stronger than that of arguments.

It is difficult to determine the rank order of the individual adjacency constraints: is it more important for the perfect CU to be adjacent to the root than the tense CU? In fact, as the adjacency constraints are ranked below the ordering constraints, it makes no difference what the ranking of the adjacency constraints are with regard to each other. For simplicity's sake, I will assume general alignment constraints which act as a short hand for sets of actual constraints with some internal rank ordering. These can be stated thus:

(26) Arg ***a*** $\sqrt{}$ argument is adjacent to root
violated by every element which sits between Arg and $\sqrt{}$
[infl] ***a*** $\sqrt{}$ inflection is adjacent to root
violated by every element which sits between [infl] and $\sqrt{}$

Note that these constraints are not domain based and so consider every element in the linear string when evaluating a candidate and not just those of a particular domain.

Adding these two constraints to the evaluation in the table in (25) we see how the desired result can be achieved:

(27)

	$\sqrt{}$ *f D_I	$\sqrt{}f$ D_I	$\sqrt{}$ *p D_A	$\sqrt{}p$ D_A	[infl] $a\sqrt{}$	Arg $a\sqrt{}$
☞ Arg1 [tense] $\sqrt{}$ [perf] Arg2		*		*		**
Arg1 [tense] $\sqrt{}$ Arg2 [perf]		*		*	*!	*
[tense] Arg1 $\sqrt{}$ [perf] Arg2		*		*	*!	*
[tense] Arg1 $\sqrt{}$ Arg2 [perf]		*		*	**!	

Turning to the case of German, we find a similar situation to English, but with two important differences. While the English root wants to be second in the argument domain and second to last in the inflection domain, the German root wants to be last in the argument domain and first in the inflection domain. Thus, for German the ordering constraints outrank the anti-ordering constraints:

(28)

	$\sqrt{}p$ D_I	$\sqrt{}$ *p D_I	$\sqrt{}f$ D_A	$\sqrt{}$ *f D_A
☞ Arg1 Arg2 $\sqrt{}$ [perf] [tense]		*		*
Arg1 $\sqrt{}$ Arg2 [perf] [tense]		*	*!	
Arg1 Arg2 [perf] $\sqrt{}$ [tense]	*!			
Arg1 $\sqrt{}$ [perf] [tense] Arg2		*	*!	

While there is only one possible optimal ordering of the argument domain elements in relation to the inflection domain elements, we will still assume that the inflection adjacency condition is the stronger because of their inflection status. As the result will be the same as in (28), there is no need to demonstrate this independently. However, this ranking will have importance in accounting for ordering effects which we will review in the next section.

6 Alteration in domain orders in matrix and subordinate contexts

So far we have looked at the basic orders of arguments and inflectional elements in the two languages. In this section we will consider some of the conditions in which these orders are changed. On the whole the main alterations to basic orders concern the order of elements of the argument domain, through "wh-fronting", topicalisation, scrambling, etc. In this section though we will concentrate on the reordering of the inflection domain elements.

There are word order differences in both German and English between matrix and subordinate contexts, though the differences are more widespread in German. In English they are restricted to interrogative contexts, while in German they extend to all contexts. In both languages, however, they concern the tense appearing in a second position which it does not in certain subordinate contexts. In declarative contexts, this second position is defined in terms of the argument domain: this means after the first argument. For simplicity in what follows we will, adapting standard if somewhat inaccurate practise, refer to this as the V2 position. We will concentrate here on the situation in German and will briefly consider English in the next section where wh-interrogative reorderings will be briefly discussed.

It is well known that German matrix contexts demand the finite element to appear in the V2 position, a condition which is not so stringent in subordinate contexts. In particular, when a complementiser is present, the finite element stays at the end of the inflection domain, as discussed above. When the complementiser is absent, however, the subordinate finite element behaves like the matrix finite element and appears in V2 position (the following data are adapted from Ackerman & Webelhuth 1999):

(29) a. Die Frau hat ihrem Kind einen Ball geschenkt
The woman has her-DAT child a-ACC ball presented
'The woman gave her child a ball'
b. * Die Frau gestern ihrem Kind einen Ball geschenkt hat

(30) a. Ich glaube dass die Frau ihrem Kind einen Ball geschenkt hat
I think that the woman her child a ball presented has
b. * Ich glaube dass die Frau hat ihrem Kind einen Ball geschenkt

(31) a. Ich glaube die Frau hat ihrem Kind einen Ball geschenkt
b. *Ich glaube die Frau ihrem Kind einen Ball geschenkt hat

In (29) the matrix context is demonstrated, showing the obligatory V2 position of the finite verb. In contrast, (30) shows the obligatory final position of the finite verb in subordinate contexts introduced by a complementiser. Finally, (31) demonstrates how, in the absence of the complementiser, the finite verb is once again obligatorily V2.

The standard wisdom is that the V2 position is identified as the complementiser position and hence when this is filled, in subordinate contexts, the finite verb cannot move there. From a structural point of view, this is the most straightforward way that an interaction between the appearance of the complementiser and the position of the verb can be accounted for. Note however, that it entails the accompanying assumption that the first position is inside the CP (its specifier) and hence a movement of the element which occupies this position is obligatory in the absence of the complementiser and impossible in its presence. Thus extra assumptions are necessary to account for the supposed movements and restrictions they appear to face. An alignment account, however, is not forced to assume that because the finite verb cannot appear in V2 in the presence of a complementiser then the complementiser must occupy this position. Indeed, without making the kind of assumptions that the structural approach has to make, it would be rather difficult to claim that the complementiser is in V2 as it clearly precedes the argument domain. All that we need to claim is that the complementiser is able to satisfy the constraint which forces the finite element to occupy V2 and thereby allowing this element to occupy the final position in the inflection domain. In the following I will briefly build a theory that accomplishes this.

Let us first consider the conditions which make the finite element give up its inflection domain final position. The constraints which achieve this are specific to the tense element as no other element of the inflection domain appears in this position under any circumstance. As second position phenomena in general is achieved by ranking a domain specific anti-precedence constraint above a related precedence constraint, we might, as a first attempt, assume the following, which we refer to collectively as the V2 constraints:

(32)

[tense] $*p\ D_A$	tense does not precede argument domain violated if all members of D_A follow tense
[tense] $p\ D_A$	tense precedes argument domain violated by every member of D_A which precedes tense

Unfortunately, things cannot be as simple as all this. As we know, the root wants to precede the inflection domain. But if the tense is pulled from

its final position in this domain, to a position which precedes all others, then it should become the domain's first element. In this case, what we have said so far would predict that the root should want to precede the tense in V2. The root, however, stays stubbornly in its position after the argument domain and in front of all the rest of the inflections. The exception to this is when the tense is the only element of the inflection domain. In this case both the tense and the root occupy V2:

(33) a. Arg [tense] Arg $\surd$[perf]
John hat ein Buch gelesen
John has a book read
'John read a book'

b. Arg $\surd$[tense] Arg
John liest ein Buch
John read a book

It would appear that, from the perspective of the root, the tense is no longer part of the inflection domain when it is in V2 and there are other domain members present. We can achieve this state of affairs if we assume that domain membership is marked on its members and that conformity to domain based constraints is dependent on this marker. If the marker for an element is deleted, the relevant constraints will be blind to that element in the same way that domain based constraints are blind to any other non-domain member.[10]

The deletion of the domain marker of course incurs the penalty of a faithfulness violation. But faithfulness will be violated if this enables higher ranked constraints to be satisfied. There are two conflicting requirements on the tense: it should be last in the inflection domain and it should be in V2. These two conditions cannot be satisfied at once as the inflection domain must follow the argument domain, as determined by the root's

[10] In actual fact things must be a little more subtle than stated here as it is common for an element to be ordered with respect to a domain that it is not a member of — for example [tense] is ordered with respect to the argument domain. Yet clearly we would not want to have to mark these elements as domain members so that the constraints will notice them. There must therefore be a difference between constraints which order domain members with respect to the domain and those which order non-members with respect to the domain. Only the former are sensitive to the presence of the domain marker.

position.[11] However, if the domain marker for the tense is deleted, the inflection domain constraint will be satisfied vacuously no matter where the tense element is placed and hence it will be free to satisfy the V2 constraints.

The only extra constraint needed to realise the above analysis is the faithfulness constraint:

(34) Faith(DM_I): violated by an input inflection domain marker which is not in the output

With this constraint ranked lower than the argument and inflectional domain constraints, we achieve the desired result as the tense favours a second position but the root stays between the argument and inflection domains:

(35)

	[tense] ***p*** D_A	[tense] ***p*** D_A	[tense] ***f*** D_I	√ ***p*** D_I	[infl] ***a*** √	√ ***f*** D_A	Faith(DM_I)
Arg Arg √ $[perf]_I$ $[tense]_I$		**!			*		
Arg $[tense]_I$ Arg √ $[perf]_I$		*	*!	*	*		
Arg √ $[tense]_I$ Arg $[perf]_I$		*	*!		**	*	
Arg √ $[perf]_I$ $[tense]_I$ Arg		*			*	*!	
Arg $[perf]_I$ $[tense]_I$ Arg √		*		*!	***		
Arg Arg √ $[perf]_I$ [tense]		**!			*		*
☞ Arg [tense] Arg √ $[perf]_I$		*			*		*
Arg √ [tense] Arg $[perf]_I$		*			**!	*	*
Arg √ $[perf]_I$ [tense] Arg		*			*	*!	*
Arg $[perf]_I$ [tense] Arg √		*		*!	**		*

[11] Recall that the English situation is different as, essentially, the root occupies the V2 position and hence the whole of the inflection domain is in this position. Looked at in this way, English is more of a V2 language than German is.

In this table, the first five candidates maintain the domain marker for the tense (indicated by an "I" index on domain members), while in the last five this is deleted on the tense. The first two constraints (V2) ensure the second position for the tense and, along with these, the next four set the conditions for the faithfulness violation. The only ways for the first three constraints to be satisfied simultaneously[12] is for either the whole of the inflection domain to appear in second position (as it does in English) or for tense to lose its domain marker and appear in the second position by itself. Given the optimal position of the root behind the argument domain and in front of the inflection domain, the second of these options is optimal. That the inflections should be adjacent to the root seems only to have a minor role in this analysis. However, it is an important condition, ensuring that the root never appears "bare": a more important condition in German than it is in English, where inflections can escape from the root in negative and interrogative contexts. We will also see that this condition has a crucial role to play in accounting for the second position of the German root.

It remains to account for why the root abandons its argument domain final position when the tense is the only inflectional element. It turns out that we do not need to add anything more to the above to capture this fact. It is here that we see the importance of the adjacency between inflections and the root. The analysis proceeds the same as above with the exception that as the tense is the only element of the inflection domain, it can be last in this domain wherever it is situated with respect to the argument domain, thus the domain marker does not need to be deleted, see (36).

As the domain marker is undeleted, the requirement that the root be in front of this domain can only be satisfied by the root being in V2, in violation of the requirement that it follow the argument domain. Of course, it could satisfy both conditions if the tense's domain marker were to be deleted. However, membership of the inflection domain does not affect the tense's basic nature as an inflection and hence it is still subject to the root adjacency requirement. As this is ranked higher than the requirement that the root be behind the argument domain, the root will abandon its final position and appear with the tense in V2.

If it were less important for inflections to be adjacent to the root, the two might appear separated. This is exactly what happens in English *do*-support situations: the tense and the root are separated and have to be

[12] The second constraint is of course violated by every candidate considered here. Because of the high ranking anti-precedence constraint, however, this is a necessary violation. The "satisfaction" of the V2 constraints therefore involves a single violation of the second.

(36)

	[tense] ***p** D_A	[tense] ***p*** D_A	[tense] ***f*** D_I	$\sqrt{}$***p*** D_I	[infl] ***a*** $\sqrt{}$	$\sqrt{}$***f*** D_A	Faith(DM_I)
Arg Arg $\sqrt{}$ $[tense]_I$		∗∗!					
Arg $[tense]_I$ Arg $\sqrt{}$		∗		∗!	∗	∗	
☞ Arg $\sqrt{}$ $[tense]_I$ Arg		∗				∗	
Arg Arg $\sqrt{}$ [tense]		∗∗!			∗		∗
Arg [tense] Arg $\sqrt{}$		∗			∗!		∗
Arg $\sqrt{}$ [tense] Arg		∗				∗	∗!

spelled out individually (see Newson & Szecsényi 2012 for the details of the auxiliary selection). Thus for English the adjacency between root and inflections is a relatively less important condition. It is essentially this property which distinguishes between "V-movement" languages such as French and German, where the root can appear fairly "high" in the argument domain, and "V-stranding" languages such as English.

Finally we turn to the role of the complementiser in determining the position of the tense in German embedded contexts. The logic of the system entails that the way that this must work is that the complementiser enables the satisfaction of the V2 constraints without the tense moving into second position. One possibility could be to make use of the fact that complementisers, besides being marked for force, are also marked for tense. However, by itself this would not solve the problem as, as we have defined the violation conditions of the constraints so far (see (32)), they will still be violated by the tense inflection when it appears in final position, no matter what else satisfies them. Instead what is needed is for the constraints to be satisfied as long as *some* tense element is to the front of the argument domain. This then is a requirement on the argument domain rather than the tense inflection. If we restate the constraints accordingly, we will achieve the correct result:

(37) D_A ***p*** [tense] argument domain cannot be preceded by tense
violated if tense precedes every member of D_A
D_A ***p*** [tense] argument domain is preceded by tense
violated by every member of D_A which is not preceded by tense

These constraints will have exactly the same effect as those previously used when the tense inflection is the only tense element in the domain: the tense inflection will not be placed at the front of the argument domain, but it will be placed as near to the front as it can get—ie in V2. However, when there is a complementiser this can also satisfy these constraints, meaning that the tense inflection is free to stay in its inflection domain final position.

Of course, the complementiser does not satisfy the constraints in (37) in exactly the same way as the tense inflection does. The complementiser is in front of the argument domain, not in V2. Thus the anti-precedence constraint is violated while the precedence constraint is fully satisfied. This is presumably due to the effects of an even higher ranked constraint which places the complementiser at the front of the whole predicate domain:[13]

(38) [comp] ***p*** D_P complementiser precedes predicate domain
violated by every member of D_P which precedes [comp]

With this constraint ranked above the V2 constraints the correct result is achieved. Note that although the high ranking anti-precedence constraint will be violated in the presence of the complementiser, nothing that the tense inflection does will make amends for this. Hence there will be no force on the tense inflection from the argument domain.

The table in (39) demonstrates the analysis.

7 Further directions and conclusion

This paper could have been much longer. As it is I have decided to leave off at this point having demonstrated the general approach and gone into some of the details of the analyses that it makes possible. A fuller treatment would obviously have addressed second position phenomena in English. But this would have necessitated prior discussion of the treatment of in-

[13] This may be a specific instance of a more general requirement that clause "type markers" be at the front of the predicate domain, as suggested in Newson (2000). I will not follow this up here.

(39)

	[comp] $\boldsymbol{p}$ D_P	D_A $\boldsymbol{*p}$ [tense]	D_A $\boldsymbol{p}$ [tense]	[tense] $\boldsymbol{f}$ D_I	$\surd\boldsymbol{p}$ D_I	[infl] $\boldsymbol{a}$ $\surd$	$\surd\boldsymbol{f}$ D_A	Faith(DM_I)
☞ [comp] Arg Arg $\surd$ $[perf]_I$ $[tense]_I$		*				*		
[comp] Arg $[tense]_I$ Arg $\surd$ $[perf]_I$		*		*!	*	*		
[comp] Arg [tense] Arg $\surd$ $[perf]_I$		*				*		*!
Arg [comp] Arg $\surd$ $[perf]_I$ $[tense]_I$	*!		*			*		
Arg $\surd$ [comp] Arg $[perf]_I$ $[tense]_I$	*!		*			*****	*	

terrogatives, a topic which itself would have doubled the paper's length. Clearly, though, this is work that needs to be done and so I will spend a small amount of time considering the issues it gives rise to and considering possible directions analyses might go. The details will, however, be left to future work.

Wh-movement involves putting a wh-element at the front of the argument domain, disregarding its argument status or which part of event structure it is related to. Thus both object and subject wh-elements will precede the argument domain. At first this might be taken to be the result of a further argument domain ordering constraint, demanding that wh-elements precede the argument domain. Such a constraint would be disinterested in the argument/non-argument status of the wh-element, placing all wh-elements, no matter their status, at the front of the argument domain. The advantage of this approach would be that we could achieve V2 phenomena in German interrogatives in much the same way as we did above for declaratives. The reorganising the argument domain would have little effect on the rest of the system which would work to place the tense in V2 behind whatever element is in first position, be it wh-element or subject.

Yet this cannot be the correct approach for a number of reasons. First wh-movement is not restricted to reordering a single argument domain and may involve a much wider context which includes any number of embedded predicate domains. Essentially the wh-element needs to precede the interrogative domain, which can be informally defined as coextensive

with its scope.[14] Second, English shows a different behaviour in declarative and interrogative contexts. While the tense is in second position in both domains, the root remains in second position of the argument domain even in interrogative contexts. This means that the wh-element cannot be seen as fronting the argument domain as otherwise the root's position would be the same in both cases. Finally when a wh-element fronts an interrogative domain, the tense that sits in the second position of this domain is that of the interrogative predicate rather than the predicate to which the wh-element is related. Thus the wh-element is clearly aligned with respect to a different and larger domain than its own argument domain.[15]

An issue arises concerning the status of a wh-element with regards to its own argument domain. Even if it is positioned with respect to a different domain, if it does not lose its own argument domain membership then we would expect to see consequences for elements aligned with respect to this. The evidence would suggest that while wh-subjects maintain their argument domain membership, others lose it. Thus, when a subject is fronted outside its own argument domain, the tense and root do not get positioned in second position behind the first argument of those that remain. Instead, the fronted wh-element still counts as the first element of its argument domain and tense and root follow it, albeit at a distance:

(40) a. wh ([tense] Arg √) √ [tense] Arg
who did you think knew the answer
b. (wh [tense] Arg √) Arg √ [tense]
* who did you think the answer knew

The round brackets in the pre-vocabulary representation indicate which elements are invisible to the argument domain constraints of the subordinate predicate. As is clear, the wh-element is outside of these brackets as the subordinate tense and root are placed in second position with respect to it. However, the fronting of a non-subject does not necessarily

[14] A formal definition of this domain would have to identify a given predicate domain as the interrogative domain based on attributed semantic properties of the predicate, similar to the treatment of an "interrogative predicate" in Newson (2000).

[15] Whether one or more wh-elements are required to front the interrogative domain, a point of linguistic variation, rests on whether the conditions of fronting are seen as a requirement of the wh-elements themselves or of the interrogative domain, similar to the situation concerning the German argument domain being fronted by a tense element discussed above.

affect the position of the tense or root of the wh-element's predicate domain:

(41) a. (wh [tense] Arg √) Arg √ [tense]
what did you think he knew
b. wh ([tense] Arg √) √ [tense] Arg
* what did you think knew he
c. wh ([tense] Arg √) [tense] Arg √
* what did you think did he know

In this case the wh-element is inside the brackets of invissible elements: the root and tense are in second position only by disregarding the argument status of the wh-element.

The situation is similar, though more complex, in the case where the interrogative domain coincides with the predicate domain of the wh-element. In this case, as above, the wh-subject is relevant for the positioning of both the root and the tense:

(42) a. wh √ [tense] Arg
who knew the answer
b. (wh) Arg √ [tense]
* who the answer knew
c. wh [tense] Arg √
* who did the answer know

The object, however, shows a mixed influence with the tense being placed in second position following the wh-element and the root taking the subject as the first element of its relevant domain:

(43) a. wh [tense] Arg √
what did he know
b. wh √ [tense] Arg
* what knew he
wh Arg √ [tense]
* what he knew

What this suggests is that the root is aligned to the argument domain (in second position) and the wh-element loses its domain membership, but the tense is aligned to the interrogative domain (also in second position) which the wh-element is obviously part of no matter what its argument status.

The details of the analysis remain to be worked out, though I see no irresoluble problems for this. The point of this discussion, indeed the point of the whole paper, is to point out the novel approach to what are well known observations that the notion of a domain provides. Not only are the solutions that the approach provides novel, but so are many of the questions. Moreover, many of the questions and issues that arise from the structural approach do not enter into consideration from the domain approach. This demonstrates that the two approaches are entirely different, and one is not just a reworking of the other. Personally, I do not think we are yet in a position to be able to argue for one approach over the other as clearly the domain based approach is far less developed as yet and we are still discovering its properties, pitfalls and advantages. Only further development will change this and I see no reason from the present point not to continue to follow this line of investigation.

REFERENCES

Ackerman, Farrell and Gert Webelhuth. 1999. A Lexical-Functional Analysis of Predicate Topicalization in German. *American Journal of Germanic Linguistics and Literatures* 11/1 : 1–65.

Gáspár Miklós. 2005. Coordination in Optimality Theory. PhD. Dissertation. Eötvös Loránd University, Budapest.

Grimshaw, Jane. 1990. *Argument Structure.* Cambridge, MA: The MIT Press.

Koopman, Hilda and Dominique Sportiche. 1991. The position of subjects. *Lingua* 85 : 211–258.

Larson, Richard. 1988. On the Double Object Construction. *Linguistic Inquiry* 19 : 335–391.

Newson, Mark. 2000. The war of the left periphery. *The Even Yearbook* 4 : 83–106.

Newson, Mark. 2010. Syntax first, words after: a possible consequence of doing Alignment Syntax without a lexicon. *The Even Yearbook* 9. Retrieved on 1 January 2013 from seas3.elte.hu/delg/publications/even/2010/10ne.pdf.

Newson, Mark. 2012. Perfect Have and Be. Paper presented to the Budapest Phonology Circle and Linguistics Discussion Group. 14 November 2012.

Newson, Mark and Vili Maunula. 2006. Word order in Finnish: whose side is the focus on?. *The Even Yearbook* 7. Retrieved on 1 January 2013 from seas3.elte.hu/delg/publications/even/2006.html#nm.

Newson, Mark and Krisztina Széchényi. 2012. Dummy Auxiliaries and Late Lexical Insertion. *The Even Yearbook* 10 : 80–125.

Mark Newson
newson@ludens.elte.hu
Eötvös Loránd University
Budapest

An LF-driven account of infinitival clauses with a nominative subject

Krisztina Szécsényi

Infinitival clauses contain a nominative DP in their subject positions in a number of languages. This fact raises an obvious question with regard to Case assignment and the UG claim that nominative Case can only be assigned by finite Inflection. The present study argues that the nominative subjects seemingly appearing in infinitival clauses are not the subjects of the infinitive itself but result from a process of restructuring, and the nominative DP comes from the subject position of the finite clause. This approach contradicts Szabolcsi (2007, 2009a, 2009b), where it is argued that the nominative subject is the subject of the infinitive. Placing emphasis on the scope differences between minimal pairs containing the nominative subject in either the finite or the infinitival clause I propose an analysis following the hybrid approach of Broekhuis's (2008) Derivations and Evaluations framework that completes core assumptions of MP with an OT-like evaluation component. I argue that the evaluation mechanism is sensitive to LF in the Bobaljik & Wurmbrand (2012) sense including information related to both scope and information structure. The nominative subject seemingly appearing within the infinitival clause is argued to be the result of general mechanisms not applicable to unpronounced constituents.

1 The data: two types of Hungarian infinitival constructions with a nominative subject

Szabolcsi (2005, 2007, 2009a, 2009b) discusses an unexpected pattern found in infinitival constructions in a number of languages. As attested in the Hungarian sentence in (1), infinitival clauses can appear with what seems to be a nominative subject related to the infinitive itself.

(1) Nem szeretnék [én is elcsúszni].
not would.like-1SG I-NOM too slip-INF
'I wouldn't like for it to be the case that I, too, slip.'

This is highly problematic from the perspective of Universal Grammar, since, according to traditional analyses, nominative Case can only be assigned by finite Inflection, which is not supposed to be present in an infinitival clause. As discussed in Szabolcsi's studies, the construction has the properties in (2).

(2) *Properties of constructions (seemingly?) containing nominative infinitival subjects*
   a. the subject of the infinitive has to be a pronoun (abandoned in later works);
   b. the matrix clause cannot have a subject of its own;
   c. the subject of the infinitive agrees with the finite verb in person and number;
   d. the matrix verb has to be a subject control verb or *fog* 'will do'.

Considering these properties, we can make the following observations: (2b) and (2c) would make it possible for us to claim that the nominative subject is actually the subject of the finite verb, but that leaves (2a) to account for. However, as indicated by (3) is not necessarily true.[1]

(3) Nem akartak csak a fiúk busszal menni/menni busszal.
not wanted-3PL only the boys bus-with go-INF
'The boys did not want it to be the case that only they go by bus.'

Further data seem to provide argument against a proposal deriving the infinitival subject from the finite clause as we find very similar patterns in a different type of sentence containing a subject in the finite clause as well, as illustrated by (4), where what is generally called a finite control predicate has its own subject, the negative quantified expression *senki* 'nobody'.

[1] The lack of restriction on the order of the verb and the verbal modifier following a focussed constituent is a general property of infinitival clauses as opposed to finite clauses (where the order is restricted to FP–verb–verbal modifier). Crucially, it does not indicate that what we are attesting is something independent of focussing.

(4) Senki nem akart csak ő leül-ni.
Nobody not wanted only he/she down-sit-INF
'Nobody wanted it to be the case that only he/she takes a seat.'

Data like this seem to be incompatible with the claim that the nominative subject belongs to the finite clause. However, there are data indicating that it is possible to have both a negative expression and a quantified subject in one and the same clause. Such a pattern can be found in the simple sentence in (5):

(5) ?Senki sem csak ő (maga/egyedül) oldotta meg a feladatot.
nobody not only he/she (him/herself) solved PV the task
'Nobody solved the task on his/her own.'

The fact that this pattern, very similar to the one in (4), is not identified as ungrammatical by native speakers of Hungarian in a simple sentence leads to the conclusion that the presence of the quantified expression does not exclude an analysis where the nominative subject is the subject of the finite clause. For this reason I am not going to treat the two constructions as different from the perspective of infinitival nominative subjects, and the proposal of the paper is expected to account for both of the constructions in a parallel fashion. Whatever accounts for the presence of both constituents in the simple sentence in (5) is assumed to explain it in (4) as well, completely independently from the Case assignment mechanism.

2 Earlier proposals

2.1 Szabolcsi (2005, 2007, 2009a, 2009b)

The Hungarian constructions presented above and similar structures cross-linguistically have been approached in a number of ways. The most straightforward ways to explain the phenomenon have been refuted on different grounds. Szabolcsi's works (2009a, 2009b) discuss three of the most plausible analyses and present arguments against them.

1. The clause union analysis, though admittedly having a lot of potential, is excluded, since not only restructuring verbs (like *want* and *seem*) but also non-restructuring ones (like *hate* and *begin*) can participate in the construction in question. In her 2007 analysis it is the pro-drop property of Hungarian and other languages allowing similar patterns that accounts for the structure, in the 2009a paper it is

Long Distance Agreement, neither of them depending on clause union taking place first.[2]

2. Backward control (Polinsky & Potsdam 2002, Bartos 2006 for the Hungarian data with nominative infinitival clauses) is another potential way to account for the data, according to which, under the copy theory of movement, the infinitival PRO subject can be considered as a lower copy that could be pronounced. Szabolcsi (2009a) excludes this account based on the observation that the overt controllee can be a full DP of a number of types, it is not restricted to being a pronoun. Another observation that could be added at his point is that there are restrictions at work in the constructions in question, but these are different from the restrictions operative in backward control in general. In the sentences discussed in the present paper the nominative subjects are always quantified.
3. The pronominal double-analysis is also excluded by Szabolcsi with the help of arguments coming from complemented pronoun examples (like *we linguists*). They do not pattern with pronominal doubles, but are grammatical in the construction in question . The fact that the nominative subject appearing in the infinitival clause is not restricted to being a pronoun is, of course, a further argument against such an analysis.

(6) Szeretné-nk csak mi nyelvészek kapni magasabb fizetés-t.
would.like-1PL only we linguists get-INF higher salary-ACC
'We would like it to be the case that only we linguists get a higher salary.'

2.1.1 The role of scope

Szabolcsi (2007, 2009a, 2009b) points out an additional property of the constructions in question, namely considerable differences in interpretation depending on whether the nominative subject appears in a position preceding the finite verb or the infinitive, as in (7). This is going to play a central role in the analysis proposed in the present study.

[2] For a cross-linguistic comparison see Szabolcsi (2009b).

(7) a. Nem akar csak ő menni busszal.
not want-3SG only he/she-NOM go-INF bus-with
'He/She doesn't want to be the only one to take the bus.'
b. Csak ő nem akar busszal menni.
only he/she not want-3SG bus-with go-INF
'It is only him who does not want to go by bus.'

Szabolcsi (2007) draws the conclusion that the constituent *nem én* 'not me' belongs to the infinitival clause. She argues that the constituents that appear in different positions depending on interpretation cannot appear in a post-verbal position since in a simple sentence it leads to ungrammaticality, as in (8b).

(8) a. Nem én kapok szerepeket.
not I-NOM get-1SG roles-ACC
'It is not me who gets roles.'
b. *Szerepeket kapok nem én.
roles-ACC get-1SG not I-NOM

There is an important aspect of the constructions that Szabolcsi's accounts fail to capture: the constituents that show this behaviour (appearing in the finite or the infinitival clause depending on interpretation) are all constituents that target the left-peripheral positions of the clause. This seems to be the relevant property that connects these constructions, and, since left peripheral positions have an obvious connection to the interpretation of the sentence, it should not be left an unexplained, accidental property of the constructions in question. In the ideal case the analysis of these constructions should also account for why this should be so. Actually, Szabolcsi herself raises similar questions in footnote 5 of the 2009a paper:

> An important question that I am not able to answer is whether overt nominative infinitival subjects must be scope-bearing operators or can be, say, plain unfocussed proper names. It is difficult if not impossible to find syntactic or semantic tests that tell apart a name that is postverbal in the matrix clause and one that is in the initial neutral position in the infinitival complement. If one believes that spelling out the infinitival subject may only happen if this is necessary to express a particular truth-conditional content, then probably such subjects must be operators.

While I completely agree with the claim that it is not possible to distinguish a postverbal unfocussed name from one in initial neutral position in

the infinitival complement clause, the present study is built on the assumption that spelling out the infinitival subject is driven by truth-conditional motivations. If such an approach turns out to be on the right track, the analysis proposed in the present paper may be superior to previous accounts by identifying LF as the trigger for the phenomenon.

In the next section a broader account of restructuring is argued for. The resulting analysis creates a domain made up of the finite clause together with its infinitival complement, within which scope-driven scrambling can take place.

2.1.2 Restructuring

One of the reasons why it is problematic to account for the data above is to do with restructuring. In Szécsényi (2009a, 2009b), however, based on Hinterhölzl (2006), it is argued that restructuring is not restricted to the verbs that have been assumed to undergo restructuring so far (stress-avoiding verbs in É. Kiss 1999, or the four verbs *szokott* 'usually does', *fog* 'will (do)', *talál* 'happen to (do something)' and *látszik* 'seem' in Tóth 2000). In Hinterhölzl's theory of sentential complementation restructuring is claimed to take place every time a predicate takes an infinitival complement due to the deficient nature of the embedded infinitival clause. The main verb takes a (sometimes deficient) CP complement irrespective of whether it is finite or infinitival. Following this I propose that the Hungarian data can also be accounted for under a broader construal of restructuring. In my proposal restructuring takes place every time a predicate takes an infinitival complement due to the deficient nature of either the embedded infinitival clause or the main verb selecting it (or both). Depending on the properties of the two clauses, restructuring is argued to have one or more of the following visible reflexes:

(9) a. the formation of verbal complexes;
b. relatively "free" word order based on É. Kiss 2003;
c. agreement between the finite verb and the object of the infinitive.

The sentences in (10) illustrate this claim: the movement of the preverb *szét* 'apart' in (10a) is motivated by the stress avoiding property of the verb and is identified as a diagnostic for restructuring (É. Kiss 1999). However, as shown by (10), the lack of preverb movement[3] does not mean that

[3] Preverb movement is not necessary when a focussed constituent saves the stress avoiding verb from being assigned stress.

no restructuring takes place: in (10b) the preverb does not have to move due to the presence of a focussed constituent before the stress-avoiding verb, but the subject of the finite clause can still appear in different positions, moreover, the finite verb is marked for definite agreement triggered by the object of the infinitive.[4] In (10c) the finite verb is used in its definite agreement form motivated by the definite object of the infinitive, apart from this nothing indicates that restructuring has taken place. In (10d) preverb climbing is not necessary due to the presence of the focussed constituent, there is no object in the infinitival clause, so the default indefinite agreement form is used. However, it does not indicate that no restructuring has taken place, simply that the relevant properties that can result in visible reflexes of restructuring are absent.

(10) a. Pál szét fogja akarni kezdeni szedni a rádiót.
Paul apart will want-INF begin-INF take-INF the radio
'Paul will want to take the radio apart.'
b. HOLNAP fogja (Pál) akarni kezdeni (Pál) szét-szedni (Pál) a rádiót (Pál).
tomorrow will-DEF Paul want-INF begin-INF apart-take-INF the radio
'Paul will want to begin to take apart the radio TOMORROW.'
c. HOLNAP fogja (Pál) akarni kezdeni (Pál) szét-szedni (Pál) a rádiót (Pál).
tomorrow will-DEF Paul want-INF begin-INF apart-take-INF the radio
'Paul will want to begin to take apart the radio TOMORROW.'
d. Pál HOLNAP fog (Pál) akarni (Pál) kezdeni (Pál) meg-komolyodni (Pál).
Paul tomorrow will-INDEF want-INF begin-INF get.serious-INF
'Paul will want to begin to get serious TOMORROW.'

In this approach, therefore, the problematic sentences above can (actually must) be claimed to undergo restructuring resulting in clause union. This solves the restructuring problem, and with the help of an LF-based approach to scrambling following Bobaljik & Wurmbrand (2012), making it possible to claim that the nominative subject actually originates in the finite clause, we can also account for the word order facts observed in §1 and the differences in the interpretation of the sentences as well. This is what we are turning to now.

2.2 Bobaljik & Wurmbrand (2012)

The LF-to-PF approach of Bobaljik & Wurmbrand (2012, henceforth B&W) can be summarised in three interrelated conclusions:

[4] Indefinite agreement is either the default pattern with an infinitival complement or the result of definiteness agreement with an indefinite object.

(11) a. There exist 'soft' constraints (economy conditions) that value a particular type of correspondence between LF and PF representations (for example, scope at LF matched by precedence at PF).
b. These constraints are uni-directional: LF (broadly construed) is calculated first, and determines PF.
c. Scope rigidity (the apparent absence of QR) is not a property of languages, but of specific configurations, and the distribution of rigidity effects is (largely) predictable from independent variation in the syntactic resources of various languages (eg possibilities for scrambling). There is no QR-parameter.

These conclusions are drawn from what they call the ¾ *signature*, a pattern found too often in languages to be accidental, defined as follows:

(12) *The ¾ signature*
Taking one LF property (A scopes over or under B) and one PF property (A precedes or follows B), what we frequently find is that three of the four logical combinations are grammatical, as in (15).

The pattern seems to contradict the so called Scope Transparency Principle (ScoT) worded a number of times in different frameworks in different ways, one of them being the definition in (13), predicting a pattern (see (14)). B&W argue that it can be explained under the assumption that ScoT interacts with other constraints resulting in the pattern actually observed, shown in (15).[5]

[5] English-type languages actually do show a 2/4 pattern, but, crucially, not the pattern predicted by ScoT, see table below. Since English lacks scrambling, there is no neutral way for PF to provide the B≫A order overtly, in PF only the A≫B order is allowed. Line 2: the QR derivation violates ScoT, but this derivation is the only means (all else being equal) of representing the B≫A scope, and for this reason the violation of ScoT is forced. The ¾ signature is expected to be present only in (scope/LF-driven) scrambling languages.

	LF	PF	ScoT
✓	A≫B	A≫B	✓
✓	B≫A	A≫B	*
not possible	B≫A	B≫A	✓
not possible	A≫B	B≫A	*

(13) *Scope Transparency Principle (universal, violable)*
If the order of two elements at LF is A≫B (A scopes over B), the order at PF is A≫B (A precedes B).

(14) *ScoT and the ¾ signature: a mismatch*

		LF	PF	ScoT
a.	✓	A≫B	A≫B	✓
b.	*	A≫B	B≫A	*
c.	✓	B≫A	B≫A	✓
d.	✓	B≫A	A≫B	*

The table in (15) shows how the ¾ signature comes about: given two LF choices and two PF choices, three of the four logical combinations can be judged acceptable only if ScoT is a soft constraint and interacts with other economy conditions, one of them being the ban on movement.[6] The Japanese data in (16) illustrate ScoT and *Move at work, where the ¾ pattern is the result of (i) two pairwise competitions starting from the same LFs and (ii) the constraints not being ordered with respect to each other unlike in OT-type analyses. Once at least one of the constraints is satisfied the result is a grammatical sentence. The outcome is ungrammatical only if neither of the constraints is met.

[6] Competing derivations are defined differently from the PF-first approach. In the PF-first approach the two English sentences in (i) are minimal pairs, which is not the case in the LF-first approach. These two sentences will be as different from each other as the sentences *A dog chased the cat* vs *A cat chased the dog*, since both theta-relations and information structure considerations are encoded in this broadened conception of LF (Wurmbrand, p.c.). To put it differently, we can say that the competing derivations are the ones that have the same LF, derivations with different LFs cannot be compared.

(i) a. Everyone saw someone.
b. Someone saw everyone.

(15) *Scope-rigid (scrambling) languages*

		LF	PF	ScoT	*Move
a.	✓	A≫B	A≫B	✓	✓
b.	*	A≫B	B≫A	*	*
c.	✓	B≫A	B≫A	✓	*
d.	✓	B≫A	A≫B	*	✓

(16) a. Some toddler read every book.
∃≫∀, ∀≫∃
b. dareka-ga subete-no hon-o yonda (Kuroda 1970)
someone-NOM all-GEN book-ACC read
'Someone read all the books.'
∃≫∀, *∀≫∃
c. subete-no hon-o dareka-ga yonda
all-GEN book-ACC someone-NOM read
'Someone read all the books.'
∀≫∃, ∃≫∀

2.3 Back to Hungarian: Szécsényi (2009a, 2009b)

Putting the further details of B&W's proposal aside let us now get back to Hungarian and identify those constructions where ScoT and the ¾ signature can be detected to be at work. Hungarian as a discourse configurational language allows scope and information structure driven reorganization of word order. One of the most well-known facts about Hungarian, completely in line with (11c), is that in a simple sentence inverse scope readings are possible in the post-verbal field as opposed to the pre-verbal field,[7] as in (17), thus, only the preverbal part of the Hungarian clause has the property of scope-rigidity.

As (17b, c) show, in the preverbal field quantifiers appear in the order defined by the scope properties of the sentence. In light of the discussion above it is relatively easy to identify the interacting constraints as ScoT and *Move: though *mindenkit* 'everyone' moves to the preverbal position in

[7] As discussed in Gyuris (2006), these are rather tendencies and can be overridden by prosodic factors: sentence initial quantified expressions pronounced with a contrastive topic intonation can have narrow scope, and postverbal quantified expressions can have wide scope when bearing primary stress.

(17b, c) this way violating the ban on movement, the result is unambiguous scope interpretation satisfying ScoT.

(17) a. Többször is meghívtam mindenki-t.
several-times also invited-1SG everyone-ACC
'I invited everyone several times.'
✓several times ≫ everyone
✓everyone ≫ several times

b. Többször is mindenki-t meghívtam.
several-times also everyone-ACC invited-1SG
'I invited everyone several times.'
✓several times ≫ everyone
*everyone ≫ several times

c. Mindenki-t többször is meghívtam.
everyone-ACC several-times also invited-1SG
'I invited everyone several times.'
✓everyone ≫ several times
*several times ≫ everyone

Returning to the topic of the present study, we are now in the position to reconsider the properties of sentences containing infinitival embedded clauses with a nominative subject. In §2.1.1 we pointed out that we were looking for an account that can directly capture the observation that these constructions without exception contain left peripheral constituents as nominative subjects of infinitival clauses. The LF-first approach of B&W seems to be promising in this respect. The sentence pair in (7), repeated here as (18), shows obvious differences in interpretation. The reason why the ¾ signature does not arise in this case is that the two sentences have different LFs, that is, they do not constitute minimal pairs within the system. In (18a) the constituent *csak ő* 'only he' appears in a position preceding the finite verb, having undergone movement from within the verb phrase, so no ambiguity is expected in this case. In (18b) the focussed constituent is in postverbal position with respect to the finite verb, but it can also be argued to appear in a preverbal domain of the infinitival clause. It is more straightforward to explain the lack of ambiguity of the sentence under the assumption that the constituent is in the preverbal domain of the infinitival clause.

(18) a. Csak ő nem akar busszal menni.
only he/she not wants bus-with go-INF
'He/She's the only one who does not want to go by bus.'
FP ≫ neg
b. Nem akar csak ő menni busszal.
not wants only he/she go-INF bus-with
'He doesn't want to be the only one to go by bus.'
neg ≫ FP

To account for nominative infinitival subjects and further data related to infinitival constructions Szécsényi (2009b) works with the following assumptions:

- a scrambling field is available somewhere in the derivation;
- this scrambling field operates with the help of partial ordering restrictions[8] (Bouma 2003, applied for Hungarian in Szécsényi T. 2009);
- these partial ordering restrictions are sensitive to LF features;
- these LF features include features related to both scope and information structure[9] (Bobaljik & Wurmbrand, 2011);
- for this reason a derivation that proceeds from LF to PF gives a more satisfactory account of the data.

The way it relates to the derivation of constructions involving infinitival clauses with nominative subjects is the following: the subject of the infinitive is a PRO, as expected, but at the same time an *only*-DP, which moves to the [Spec, FP] position of the infinitival CP. This is what makes such constructions problematic: there are different ways to express Focus in Hungarian (movement to a designated Focus position or stress assignment), but neither of them is applicable to an unpronounced constituent.

Szécsényi (2009b) proposes the following analysis for the construction, leading to the structural representation in (19): the nominative con-

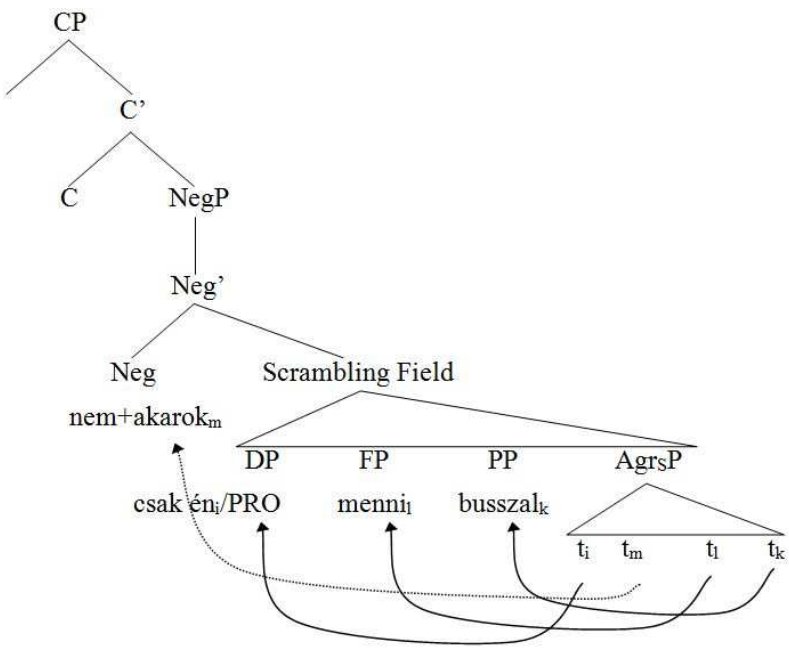
[8] The reordering mechanism of B&W is argued to be completed by Bouma's proposal containing partial ordering restrictions. Their importance lies in explaining the fact that certain constituents can appear in different positions within the sentence (10). They turn out to be those that are not specified for LF features, hence the ordering rule does not determine a fixed position for them. It does not directly bear on the issue of nominative DPs in the infinitival clause, since they are always scope bearing constituents.

[9] Though the same approach is assumed for Hungarian, due to the complexities of interaction between scope and information structure, the present paper only focusses on scope.

stituent is the subject of the finite clause. The scrambling field, defined as above, makes scope-driven reordering possible after restructuring. This way the overt DP ends up in the same domain as the infinitival PRO it is coindexed with, and we have two DPs in the scrambling field with the same reference. The covert nature of PRO is not problematic for LF, but a "substitution" takes place at the PF part of the derivation motivated by requirements of the PF interface driven by the need for, eg focussed constituents to be pronounced. Though the exact mechanisms of this substitution procedure are still to be worked out, the account may also have important implications for Long Distance Agreement. This substitution, as shown in (19), takes place within one domain, the scrambling field, that is, under these assumptions Long Distance Agreement is not so long distance after all. Investigating whether Long Distance Agreement can be traced back to similar patterns in all the other cases where it is argued to arise seems to be a promising research project.

One disturbing aspect of the analysis proposed is the implicit claim that the structure building process contains a field operating on the basis of mechanisms different from the general structure building mechanisms of generative grammar. A further problem is that this field is sandwiched between structures conforming to these general, traditional ways of structure building:

(19)



Another, related problem arises from Szécsényi (2009b) assuming a theory of negation following Puskás (1998), where the negation element is a head filling Neg. Treating negation differently from other scope bearing elements and excluding it from the scrambling field results in missing an almost straightforward generalization. Negation *is* a scope bearing constituent, so it actually follows from the logic of the proposal that it should also be part of the scrambling field, more so because it interacts with the constituents appearing there. Surányi (2002) presents an alternative approach to negation completely in line with the proposal presented above. According to this analysis, negation is understood to be the part of a multiple specifier configuration resulting from the co-projection of focus and negation. The order of the two constituents within this multiple specifier configuration is not restricted but depends on their relative scope with respect to each other. Different orderings lead to different interpretations very similarly to the data in (18). The scope differences result from the different orderings of negation and focus, where the outer specifier position is argued to be reserved for the constituent with wide scope.

The assumption shared by these two approaches concerns the presence of a field where constituents are ordered based on their scope properties. In a sense Szécsényi (2009b) can be regarded to be an extended version of Surányi (2002): the constituents with a scope-driven ordering are not restricted to negation and focussing. The present paper aims at extending my earlier proposal in this direction: the whole left periphery is actually a scrambling field in the B&W sense, where constituents are ordered based on LF considerations. Worded differently, the structure building component of grammar is followed by a reordering process in the languages making it possible.[10] This reordering is different from the structure building procedure and operates with the help of different constraints. It uses already existing structure, but does not operate with the help of external or internal merge. It is no more than linear reordering sensitive to LF features. The hybrid approach of Broekhuis (2008), discussed in the next section, argues for an a model of grammar that provides us with tools for the claims worded here.

[10] Whether a language allows LF-driven scrambling or not probably depends on the morphological properties of the language in question. Defining the nature of these properties is not the purpose of the present paper. For different approaches to the question see van Gelderen (2003).

2.4 Broekhuis (2008): Derivations and Evaluations

The proposal introduced in the previous section finds a very natural translation into the Derivations and Evaluations framework of Broekhuis (2008). He proposes the following architecture of grammar:

(20) *Derivations and Evaluations*
Input → C_{HL} → Output representation → OT Evaluator → Optimal output

Comparing this with the architectures of grammar deducible from different stages of the Minimalist Program, Broekhuis observes that the two frameworks are actually very similar in nature:

(21) *Chomsky (2000) and subsequent work: the Minimalist Inquiry framework with the introduction of Agree (feature checking at a distance)*
Input → Generator C_{HL} → Output PF/LF representations (satisfying FI) → PF/LF Filters → Optimal output

Based on this, he argues that MP and OT are not incompatible but complementary frameworks, they assume the same kind of architecture of grammar, but focus only on one of two components: MP on properties of C_{HL} (containing a small set of operations subject to inviolable conditions defining a limited candidate set), OT on the evaluator (a universal set of violable constraints with a language-specific ranking):

> Representations created by some version of the computational system of human language C_{HL} from MP are evaluated in an optimality-theoretic fashion [...] whereas MP has been especially successful in formulating a restrictive theory of core grammar, that is, the universal properties of grammar are encoded in C_{HL}, OT has been very successful in describing the more peripheral, language-specific properties of languages and the variation between languages. (Broekhuis 2008 : 1)

The fact that there are entirely different explanations for similar phenomena in MP and OT is argued to be immaterial, since it is not *a piori* given whether a certain phenomenon belongs to core syntax or the periphery. Different approaches to rearrangement phenomena and head-movement are well-known examples showing that it is not obvious what belongs to core syntax and what does not.

The constraints Broekhuis identifies to be at work in his Derivations and Evaluations framework belong to two basic classes of syntactic constraints: C_{HL} (EPP and Economy constraints) and interface (PF and LF) constraints. One of the LF constraints, as expected, defines scope interpretation:

(22) *SCOPE*
relative scope of quantifiers corresponds to the hierarchical order of their topmost A-positions.

This in a sense is similar to B&W's Scope Transparency Principle with the difference that the approach of B&W does not raise the question of whether the relevant types of movement belong to the A- or the A′-movement type. In connection with scrambling phenomena in general there is a controversy about this issue, and arguments are available for both of the movement types. Szécsényi (2009a, 2009b) argues that the reason why it is not easy to come to terms with regard to this question is that scrambling is not the result of movement, but a different process taking place in the scrambling field of the derivation, that of linear reorganisation sensitive to LF-features. The Derivations and Evaluations framework offers a natural way to complete the earlier analysis presented above in (19) as follows: the scrambling field actually belongs to the evaluation part of the grammar, and not the structure building one, operating based on B&W's LF-driven scrambling mechanisms.

In light of this the Hungarian word order pattern where nominative subjects precede an infinitive result from the following:

- first, a biclausal structure is projected in the derivational component of grammar using the usual mechanisms of Merge where the nominative subject is the subject of the finite clause and the subject of the infinitival clause is a PRO;
- the biclausal structure is restructured as a monoclasual one as argued in §2.1.2 based on the data in (10);
- restructuring is followed by scope-driven scrambling in the evaluation component of the grammar relinearizing constituents based on their scope properties. Here the nominative subject and PRO end up in the same domain and PF considerations (focussing, transparent scope expressable with the help of visible constituents, etc) may place the visible nominal expression in different positions within the sentence.

3 Conclusion

The present study has presented a Derivations and Evaluations-based account of word order in Hungarian sentences with the help of which it is possible to describe structures seemingly containing a nominative subject in infinitival clauses. The framework is a hybrid system where the structure building mechanism is completed by an evaluation component. Scope features, and thus scope-driven scrambling belongs to this evaluation component where the structure building component of grammar is followed by a relinearization of constituents based on their scope properties. There are a number of questions that remain to be answered: exactly what defines whether a language has resort to scope-driven operations within this evaluation component or not; identifying whether different phenomena belong to derivations or evaluations and, more specifically, investigating the details of the correlation between Long Distance Agreement and scrambling. Further research is expected to be able to provide satisfactory answers to these questions.

REFERENCES

Bartos, Huba. 2006. És mégis mozog? [And it still moves?]. In: Kálmán 2006 : 49–67.

Bobaljik, Jonathan David and Susi Wurmbrand. 2012. Word Order and Scope: Transparent Interfaces and the $^3/_4$ Signature. *Linguistic Inquiry* 43.3 : 371-421.

Bouma, Gosse. 2003. Verb clusters and the scope of adjuncts in Dutch. In: Pieter A. M. Seuren and Gerard Kempen (eds.), *Verb constructions in German and Dutch.* Amsterdam: John Benjamins. 5–42.

Broekhuis, Hans. 2008. *Derivations and Evaluations: object shift in the Germanic languages.* Berlin & New York: Mouton de Gruyter.

É. Kiss, Katalin. 1999. Strategies of complex predicate formation and the Hungarian verbal complex. In: István Kenesei (ed.), *Crossing boundaries: Advances in the theory of Central and Eastern European languages.* Amsterdam: John Benjamins. 91–114.

É. Kiss, Katalin. 2003. Argument scrambling, operator movement, and topic movement in Hungarian. In: Simin Karimi (ed.), *Word order and scrambling.* Malden, MA: Blackwell. 22–43.

Gelderen, Véronique van. 2003. *Scrambling Unscrambled.* PhD dissertation, LOT, Utrecht.

Gyuris, Beáta. 2006. Esettanulmány a hatókör és az információs szerkezet kapcsolatáról [Case study about the interaction between scope and information structure]. In: Kálmán 2006 : 49–67.

Hinterhölzl, Roland. 2006. *Scrambling, Remnant Movement, and Restructuring in West Germanic.* Oxford: Oxford University Press.

Polinsky, Maria and Eric Potsdam. 2002. Backward control. *Linguistic Inquiry* 33 : 245–282.

Surányi, Balázs. 2002. Negation and the Negativity of N-words in Hungarian. In: István Kenesei and Péter Siptár (eds.), *Approaches to Hungarian 8: Papers from the Budapest Conference.* Budapest: Akadémiai Kiadó. 107–132.

Szabolcsi, Anna. 2005. Overt infinitival subjects (if that's what they are). In: Hans Broekhuis, Norbert Corver, and Riny Huybregts (eds.), *Organizing Grammar: Studies in Honor of Henk Van Riemsdijk.* Berlin: de Gruyter. 618–625.

Szabolcsi, Anna. 2007. *Hidden in plain sight: Overt subjects in infinitival control and raising complements.* Retrieved on 2013-01-01 from ling.auf.net/lingBuzz/000445.

Szabolcsi, Anna. 2009a. Overt Nominative Subjects in Infinitival Complements in Hungarian. In: Marcel den Dikken and Robert Vago (eds.), *Approaches to Hungarian 11.* Amsterdam: John Benjamins. 251–276.

Szabolcsi, Anna. 2009b. Overt Nominative Subjects in Infinitival Complements Cross-linguistically: Data, Diagnostics, and Preliminary Analyses. *NYU Working Papers in Linguistics, Volume 2: Papers in Syntax.*

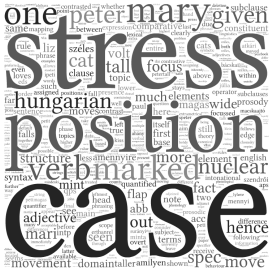
Szécsényi, Krisztina. 2009a. On the double nature of Hungarian infinitival constructions. *Lingua* 119/4 : 592–624.

Szécsényi, Krisztina. 2009b. An LF-driven Theory of Scrambling in Hungarian Infinitival Constructions. PhD dissertation, University of Szeged.

Szécsényi, Tibor. 2009. Lokalitás és argumentumöröklés. A magyar infinitívuszi szerkezetek leírása HPSG keretben [Locality and argument-inheritence. A description of Hungarian infinitival clauses in HPSG framework]. PhD dissertation, University of Szeged.

Tóth, Ildikó. 2000. Inflected Infinitives in Hungarian. PhD dissertation, Tilburg University.

Krisztina Szécsényi
kszecsenyi@gmail.com
University of Szeged



On the Syntax–Prosody Mapping in Hungarian Comparatives

Júlia Bácskai-Atkári

The aim of the present paper is to provide an adequate description of the syntax–prosody mapping in Hungarian comparative subclauses, which may account for certain differences observed in the position of the quantified expression. As will be shown, Hungarian has two quantifier operators, *amilyen* 'how' and *amennyire* 'how much' that may appear together with a lexical AP; however, the latter but not the former may be separated from the AP. I will argue that this contrast has important consequences in terms of information structure too: while in the case of *amilyen* GIVEN and F-marked APs behave in the same way, with *amennyire* there are also differences with respect to the position of the AP. This variation will be shown to be derivable from general rules of syntax–prosody mapping that apply in Hungarian comparative subclauses.

1 Introduction

In Hungarian, the standard value of comparison can be expressed by either a case-marked DP or a CP. Consider the following examples:

(1) a. Peti magas-abb [$_{DP}$ Mari-nál].
Peter tall-er Mary-ADESSIVE
'Peter is taller than Mary.'
b. Peti magas-abb [$_{CP}$ mint Mari].
Peter tall-er than Mary
'Peter is taller than Mary.'

In (1a), the standard value (ie to which something is compared) is expressed by the DP Marinál 'Mary-DAT', which is inherently marked for the

adessive case; this is an instance of phrasal comparison. By contrast, (1b) shows clausal comparison, where the standard value is expressed by a CP headed by the complementiser *mint* 'than'; in this case, the DP *Mari* 'Mary' is in the nominative case since it functions as the subject of the subclause.

The full CP status of the bracketed string becomes obvious when other elements also appear in the structure, the option of which is naturally not available in phrasal comparatives. Besides the fact that the verb can be overt, it has to be mentioned that Hungarian is a language that allows the overt presence of a quantified degree expression in the subclause as in (2):

(2) a. Peti magas-abb [$_{CP}$ mint **a-milyen magas** Mari volt].
Peter tall-er than REL-how tall Mary was
'Peter is taller than Mary was.'

b. Peti-nek több macská-ja van [$_{CP}$ mint **a-hány**
Peter-DAT more cat-POSS.3SG is than REL-how.many
macská-ja Mari-nak van].
cat-POSS.3SG Mari-DAT is
'Peter has more cats than Mary.'

As can be seen, the subclauses are full in the sense that they are allowed to contain an inflected verb; moreover, they may also overtly realise a quantified expression, the QP *amilyen magas* 'how tall' in (2a) and the DP *ahány macskája* 'how many cats' in (2b), the latter containing the QP *ahány* 'how many'. Both of these elements count as GIVEN: they have logically identical antecedents in the matrix clause (*magasabb* 'taller' and *több macskája* 'more cats', respectively).

However, it is also possible to have F-marked quantified elements in the subclause; consider:

(3) a. Az asztal hossz-abb [$_{CP}$ mint **a-milyen széles** az iroda].
the table long-er than REL-how wide the office
'The table is longer than the desk is wide.'

b. Peti-nek több macská-ja van [$_{CP}$ mint
Peter-DAT more cat-POSS.3SG is than
a-hány **kutyá-ja** Mari-nak van].
REL-how.many dog-POSS.3SG Mary-DAT is
'Peter has more cats than Mary has dogs.'

In this case, the QP *amilyen széles* 'how wide' in (3a) is clearly not logically identical with the matrix clausal QP *hosszabb* 'longer', and the same

is true for the relation between *ahány kutyája* 'how many dogs' and *ahány macskája* 'how many cats' in (3b).

The problem is essentially the following. Quantified elements in Hungarian seem to occupy invariably the same position irrespectively of whether they are F-marked or not, which raises the question of whether and to what extent they may change the phonological phrasing of the subclause, ie whether and to what extent their presence causes any difference in assigning stress to other elements in the structure.

The question is compelling especially because in English the case seems to be straightforward. Consider the following examples:

(4) a. Peter is taller than MARY is (?? tall).
b. The table is longer than the desk is WIDE.

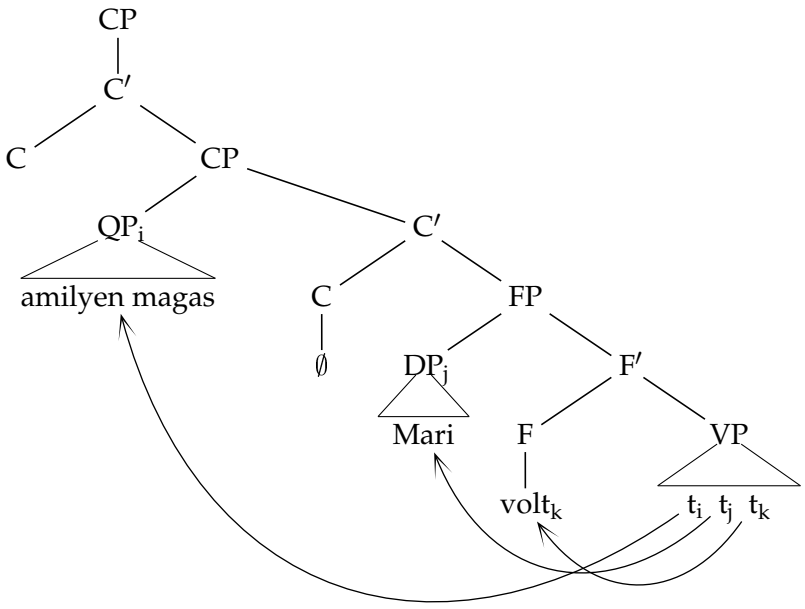
In English, a GIVEN quantified expression is normally eliminated from the structure: the presence of the QP in (4a) is very marked; however, if the QP is F-marked, as in (4b), the sentence is completely grammatical. Note that — for independent reasons — English realises the overt copy of the quantified expression in its base position and the operator element is zero (cf Bácskai-Atkári 2010, 2012). Hence it seems that while English clearly makes a distinction in terms of whether the quantified element is GIVEN or F-marked in terms of what qualifies as a grammatical sentence and what not, Hungarian allows both possibilities. I will show that this difference can be accounted for in terms of the differences in the syntax–prosody mapping rules between the two languages and will provide an explanation for the Hungarian data that may also predict and rule out further theoretically possible configurations.

2 Comparatives and contrast

As is known, comparatives tend to inherently encode contrast (cf Klein 1980, Larson 1988); the contrasted element is generally the focus of the clause, bearing nuclear stress and expressing exhaustive identification (cf É. Kiss 2002). The structure of the subclause in (2a)—ie the CP *mint amilyen magas Mari volt* 'than Mary was tall'—is shown in (5).

As can be seen, there are altogether three movement operations: first, the QP *amilyen magas* 'how tall' has to move up to a [Spec; CP] position via ordinary *wh*-movement (cf Chomsky 1977). Second, the DP *Mari* 'Mary' moves to the [Spec; FP] position: this movement is traditionally claimed to be motivated by the fact that the focussed constituent has to check its

(5)



[+Focus]-feature against the Focus head (cf Bródy 1990, 1995). Third, the verb moves up to the F head.

This seems to imply a straightforward relation between the contrasted element and the focus of the clause; moreover, it is typically this element that remains overt only as in most comparative subclauses only one element is contrasted and the rest of the clause can hence be deleted. This happens in the case of (1b): the subclause *mint Mari* 'than Mary' contains only the contrasted element but not the GIVEN QP.

While it is true that the comparative subclause must contain at least one element that is contrasted — irrespectively of whether comparison involves equality or inequality —, it is not true that there could be no more contrasted elements. One type is when the quantified expression is also contrasted with its matrix clausal counterpart, as in (3a) — or its English counterpart in (4b); in addition, the subclause may contain other contrasted elements as well. Consider the Hungarian examples in (6).

As can be seen, it is possible to have contrasted elements other than the subject: an object argument, as in (6a), an adverbial modifier, as in (6b), or the lexical verb itself, as in (6c). Hence contrastivity in itself is not linked to any designated positions or functions in the comparative subclause.

(6) a. Mari jo-bb-an szeret-i Peti-t, mint Liza Pali-t.
Mary good-er-ly love-s Peter-ACC than Liz Paul-ACC
'Mary loves Peter more than Liz does Paul.'
b. Mari több macská-t lát-ott kedd-en, mint Pali szombat-on.
Mary more cat-ACC see-PST Tuesday-SUP than Paul Saturday-SUP
'Mary saw more cats on Tuesday than Paul did on Saturday.'
c. Mari több regény-t olvas-ott, mint a-hány-at Peti ír-t.
Mary more novel-ACC write-PST than REL-many-ACC Peter write-PST
'Mary read more novels than Peter wrote.'

3 Syntax–prosody mapping in Hungarian

Since the primary focus of the present essay is neither to review nor to modify the more or less standard assumptions concerning the syntax–prosody mapping in Hungarian, I will restrict myself to introducing only some basic notions that will be used in this paper.

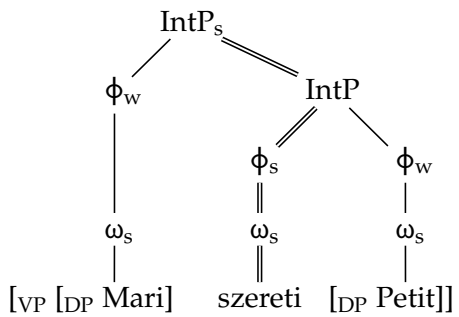
As expressed by Szendrői, "nuclear stress in Hungarian is assigned to the leftmost phonological phrase in the intonational phrase" and "phrasal stress is assigned to the leftmost phonological word in the phonological phrase" (2001 : 45). This predicts that Hungarian stress, as opposed to English, is leftward-oriented; hence focussed constituents have to move leftward in order to be found in a stress position.

Let us take the following example:

(7) Mari szeret-i Peti-t.
Mary love-s Peter-ACC
'Mary loves Peter.'

In this case, the sentence is neutral and nuclear stress falls on the verb; following Szendrői (2001 : 48–49), the representation is as follows:

(8)



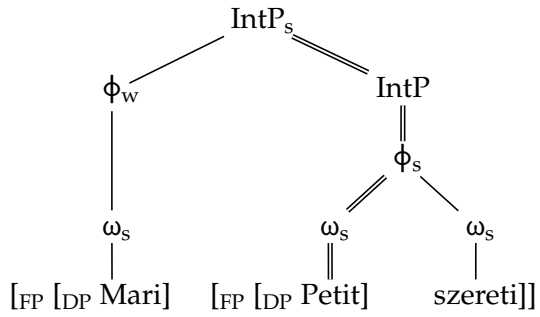
As can be seen, the DP *Mari* 'Mary', which is a topic in the clause, is adjoined to the VP and hence is treated as extrametrical (Szendrői 2001 : 49, following Truckenbrodt 1999). In other words, the rule assigning main sentential stress to the entire intonational phrase (IntP) simply disregards such adjoined constituents and operates only within the lower IntP; since in this IntP the leftmost element is the verb itself, nuclear stress will fall on the verb in a neutral Hungarian sentence.

The picture is slightly different when the sentence contains a focussed constituent, as in (9):

(9) Mari PETI-T szeret-i.
Mary Peter-ACC love-s
'It is Peter that Mary loves.'

In this case, the DP *Petit* 'Peter' is moved to the specifier of a Focus phrase (FP) and the structure is as follows (cf Szendrői 2001 : 51):

(10)



The pattern is similar to the one in (8); however, there are some important differences that have to be mentioned. First, the topic *Mari* 'Mary' is adjoined to the FP, while the DP *Petit* 'Peter' also moves out of the VP and lands in the specifier position of the FP, the head of which is filled by the moving verb—see the representation given in (5). The topicalised constituent is again extrametrical; in the lower IntP, stress regularly falls on the leftmost constituent—which is in this case the DP *Petit* and not the verb.

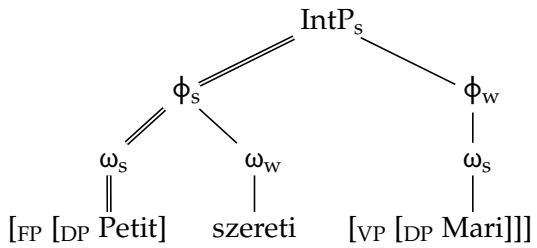
According to Szendrői (2001 : 50–53), focus movement in Hungarian is stress-driven: the focussed constituent moves to [Spec; FP] to get main stress, while verb movement happens in order to license an empty functional head projection (that is, F). As opposed to this, topics move to adjunct positions and as such their movement seems to be optional. As a

matter of fact, the sentence in (9) could also be phrased as (11), where the DP *Mari* 'Mary' stays in its postverbal position:

(11) PETI-T szeret-i Mari.
Peter-ACC love-s Mary
'It is Peter that Mary loves.'

Based on what has been said above and Szendrői (2001 : 51–52), the intonational phrasing should be as follows:

(12)



In this case, the DP *Mari* 'Mary' does not have to be treated extrametrical in order to avoid main stress falling on it: stress falls on the leftmost constituent, which is — just as in (10) — the DP *Petit* 'Peter'.

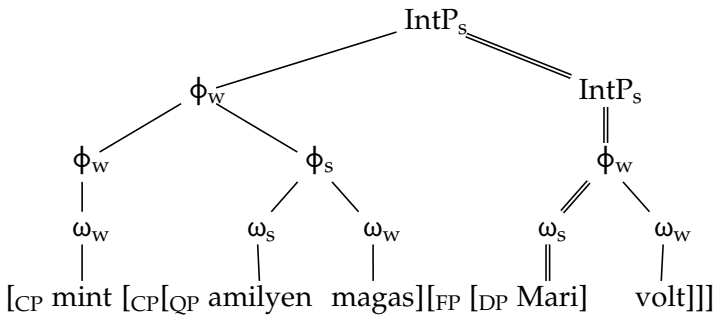
Needless to say, there would be a number of other issues to discuss in terms of focussing in Hungarian but at this point I do not wish to argue either for or against Szendrői's (2001) approach that takes focus movement to be stress-driven. For our purposes here, these basic notions will be sufficient.

4 Comparative subclauses and focussing

Having established all these, let us have a look at comparative subclauses. The syntactic structure of the string *mint amilyen magas Mari volt* 'than Mary was tall' was already shown in (5); the intonational phrasing is given in (13).

First of all, based on the Lexical Category Condition (Truckenbrodt 1999 : 226) and the Principle of Categorial Invisibility of Function Words (Selkirk 1984 : 226), function words are to be treated as invisible with respect constraints holding at the syntax–phonology mapping: as a consequence, the complementiser *mint* 'than' may not receive strong stress. In the analysis provided by Sato & Dobashi (2012) for English, it is shown that

(13)



complementisers are phonologically dependent on the word that immediately follows them.

The same is not true for the operator *amilyen* 'how', which does not necessarily require an element following it:

(14) Olyan, **amilyen.**
how REL-how
'He/She is what he/she is.'

As a consequence, the operator *amilyen* 'how' may receive a strong label and as far as the QP *amilyen magas* 'how tall' is concerned, phrasal stress falls on *amilyen,* the leftmost element in the phrase. On the other hand, in terms of intonational phrasing the entire C + QP complex counts as an adjunct to the lower IntP and will hence be treated as extrametrical by the nuclear stress rule.

It is worth mentioning at this point that the theory presented by Szendrői (2001) needs to be modified inasmuch as extrametricality and topics are concerned: as nuclear stress clearly does not fall on the quantified element in the C-domain, it must be external to the domain in which nuclear stress is assigned. However, the movement of this quantified expression is obligatory: as opposed to topics, it cannot remain in its base position:

(15) *Peti magas-abb [$_{CP}$ mint Mari volt **a-milyen magas**].
Peter tall-er than Mary was REL-how tall
'Peter is taller than Mary was.'

As also indicated in (5), the quantified expression moves to a [Spec;CP] position via ordinary *wh*-movement hence syntactically it is not an adjunct.

In other words, adjuncthood is not a satisfactory criterion for determining extrametricality in the prosodic structure.

The subclause may of course contain (contrastive) topics too, as in (16):

(16) Mari jo-bb-an szeret-i Peti-t, mint a-mennyi-re
Mary good-er-ly love-s Peter-ACC than REL-how.much-SUBL
Liza PALI-T szeret-i.
Liz Paul-ACC love-s
'Mary loves Peter more than Liz does Paul.'

In this case, the DP *Liza* 'Liz' is a contrastive topic that appears before the focussed DP *Palit* 'Paul', the latter bearing nuclear stress.

It is, however, by no means obligatory to move all contrastive elements before the verb:

(17) Mari jo-bb-an szeret-i Peti-t, mint a-mennyi-re
Mary good-er-ly love-s Peter-ACC than REL-how.much-SUBL
LIZA szeret-i Pali-t.
Liz love-s Paul-ACC
'Mary loves Peter more than Liz does Paul.'

Here the focus is the DP *Liza,* and the DP *Palit* 'Paul', which is likewise contrastive, stays in its base position after the verb.

What is not permitted is to leave all contrasted elements in the VP:

(18) *Mari jo-bb-an szeret-i Peti-t, mint a-mennyi-re
Mary good-er-ly love-s Peter-ACC than REL-how.much-SUBL
szeret-i Liza Pali-t.
love-s Liz Paul-ACC
'Mary loves Peter more than Liz does Paul.'

This clearly shows that the subclause is not a neutral sentence as in that case the main stress could (and should) fall on the verb; this is irrespective of whether the verb is GIVEN or not: even if one substitutes *szereti* 'loves' in (18) with another verb, eg *utálja* 'detests', the result is still not grammatical.

In sum, the prosodic mapping of a (Hungarian) comparative subclause has the following characteristics: the complementiser is by definition weak; the quantified expression moves to a position above the domain of assigning main sentential stress; topics may appear between the quan-

tified expression and the domain of assigning main sentential stress; the presence of a focussed constituent is obligatory.

5 More on the quantified expression

So far I have dealt with examples containing mainly the quantifier head *amilyen* 'how' and an AP. However, Hungarian also allows the quantifier *amennyire* 'how much' to appear with lexical APs; this operator exhibits different behaviour. Consider the following examples:

(19) a. Peti magas-abb [$_{CP}$ mint **a-milyen/a-mennyi-re**
Peter tall-er than REL-how/REL-how.much-SUBL
magas Mari volt].
tall Mary was
'Peter is taller than Mary was.'

b. Peti magas-abb [$_{CP}$ mint *__a-milyen/a-mennyi-re__
Peter tall-er than REL-how/REL-how.much-SUBL
Mari volt **magas**].
Mary was tall
'Peter is taller than Mary was.'

As can be seen, *amennyire* 'how much' but not *amilyen* 'how' may be extracted from the QP; this is due to the fact that they occupy different positions in the QP containing the lexical AP (cf Kántor 2008).

In terms of prosodic structure, this simply means that while the quantifier *amennyire* 'how much' is still in a position outside the domain where nuclear stress is assigned, the adjective itself may remain in the VP and hence be assigned weak stress.

What is more striking, however, is that the behaviour of *amennyire* 'how much' and adjective strings also seems to differ according to whether the adjective is GIVEN or not. The possible positions for a GIVEN adjective, along with the average judgement of native speakers (individual ratings may differ) are indicated in (20):

(20) Peti magas-abb [$_{CP}$ mint a-mennyi-re **?magas**$_1$
Peter tall-er than REL-how.much-SUBL tall
Mari **?/??magas**$_2$ volt **??magas**$_3$].
Mary tall was tall
'Peter is taller than Mary was.'

As can be seen, the adjective preferably moves together with the quantifier and the least preferable one is when it stays in its base position. What is unexpected is that a middle position, ie *magas*$_2$, is preferred over the sentence-final one: since this is the position immediately preceding the verb, and since the comparative subclause obligatorily contains a focus phrase (FP), as was established in the previous section, the adjective *magas* 'tall' in this case seems to be located precisely in the focus position, despite the fact that it is GIVEN and hence not contrastive.

Before attempting to handle this apparent problem, let us see the data for F-marked adjectives:

(21) A macska kövér-ebb, mint a-mennyi-re **?/??széles**$_1$
the cat fat-er than REL-how.much-SUBL wide
a macskaajtó ✓**/?széles**$_2$ volt **?/??széles**$_3$**.**
the cat flap wide was wide
'The cat is fatter than the cat flap is wide.'

Though the positions are the same, the preferences are different. On the one hand, it has to be mentioned that the presence of an overt F-marked adjective is generally more acceptable than that of a GIVEN one: the latter case involves the repetition of superfluous material and deletion would be preferred (how this may be carried out falls outside the scope of the present essay). If, however, the adjective is F-marked then it obviously cannot be deleted; the reason why these constructions are still slightly marked is lies in the fact that the operator *amennyire* 'how much' is less preferred by speakers than the operator *amilyen* 'how'.

On the other hand, the most preferred position for an F-marked adjective is precisely the one immediately preceding the verb, ie *széles*$_2$; the other two possibilities are less acceptable though definitely not ruled out. This is in itself not the least surprising because the contrasted adjective appears in the canonical contrast position, ie the specifier of the FP.

The last point to make concerns a configuration where the quantified expression precedes the verb and the subject DP of the clause stays in the VP. Here there is a crucial difference between GIVEN and F-marked adjectives, as in (22).

As can be seen, the appearance of the GIVEN adjective is ungrammatical in this configuration whereas an F-marked adjective is acceptable, by and large as much as when the subject DP precedes it. The identical behaviour of *széles*$_2$ and *széles*$_4$ is expected but the difference between *magas*$_2$ and *magas*$_4$ is striking. On the other hand, the adjectives here immedi-

(22) a. *Peti magas-abb [$_{CP}$ mint a-mennyi-re **magas**$_4$
Peter tall-er than REL-how.much-SUBL tall
volt Mari].
was Mary
'Peter is taller than Mary was.'

b. ?A macska kövér-ebb, mint a-mennyi-re **széles**$_4$
the cat fat-er than REL-how.much-SUBL wide
volt a macskaajtó.
was the cat flap
'The cat is fatter than the cat flap is wide.'

ately follow the quantifier, which raises the question whether the position is rather identical to that of *magas*$_1$ and *széles*$_1$ than to *magas*$_2$ and *széles*$_2$. Though this may be tempting at the first sight, note that *magas*$_1$ is in fact acceptable (as is *széles*$_1$, even if less preferred than *széles*$_4$).

At any rate, this clearly indicates that the syntax–prosody mapping schematised in the previous section needs to be refined in order to account for further differences in the information structure.

To summarise what has been said so far, the problem is essentially the following: there are altogether three surface positions where the adjective can appear; one of them (the one immediately preceding the verb) seems to be one that hosts F-marked constituents, see (22) — however, if there is another contrastive constituent before it, the presence of given constituents in this position becomes acceptable, see (20).

6 Default Nuclear Stress Position and recursive IntPs

Discussing the behaviour of Hungarian QPs, Ishihara & Surányi (2009) argue that Intonational Phrases are recursive, hence there is not only one single position available before the verb in the domain where nuclear stress can be assigned. Consider the following example they give:

(23) A vizsgá-n minden-ki minden-t meg-old-ott
the exam-SUPERESS every-who every-ACC PARTICLE-solve-PST-3SG
egy óra alatt.
one hour under
'At the exam, everyone solves everything within one hour.'

In the sentence above, there are two quantified expressions: *mindenki* 'everyone' and *mindent* 'everything'. The experiment carried out by Ishihara & Surányi (2009) arrived at the result that the default nuclear stress position is in fact the highest QP (here: *mindenki*). This is important because *mindenki* receives both nuclear stress and focal interpretation despite the fact that it is not located in a [Spec; FP] position: the verb is immediately preceded by the verbal particle (*meg*) and hence the sentence displays the otherwise neutral verbal modifier — verb order. Depending on what has to be contrasted exactly, nuclear stress either falls on the highest QP (*mindenki*) or stress may also be shifted to the lower constituents.

What this tells us is that the focus domain is wider than merely one position before the finite verb and that — though with differences among individual speakers — focus interpretation and stress assignment may affect more than one constituent in this domain. The importance of this is clearly that elements preceding the preverbal constituent are not necessarily topics and hence they are not necessarily adjuncts in terms of prosodic structure.

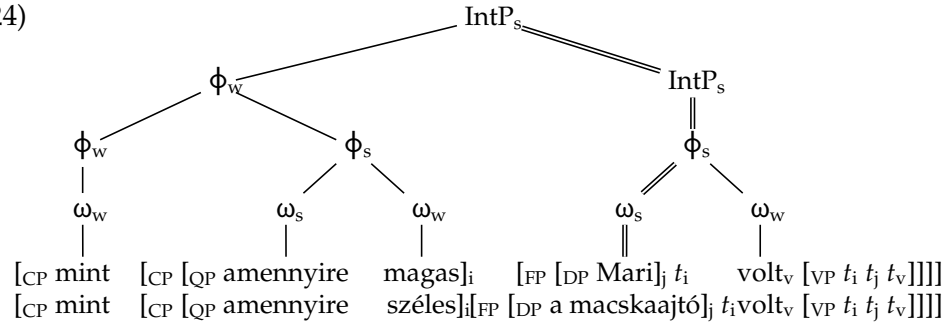
7 Syntax–prosody mapping in comparative subclauses

Seen in this light, the data presented in §5 may actually be accounted for. The core idea is this: the QP in the subclause is base-generated in the VP, then first moves to the specifier of a functional position (call it FP), which is an extension of the vP, and subsequently it moves to the lower [Spec; CP] position. While it is obligatory for the operator itself to move up as high as the [Spec; CP] position, that being the canonical operator position (at least for relative operators), the lexical AP may be stranded either in its base position in the VP, or in the [Spec; FP]—but it may of course move together with the operator. Note that this holds only in the case of *amennyire* 'how much', which may move out of the entire QP on its own: for *amilyen* 'how', the only possibility is to move together with the AP.

Let us first see the relatively unproblematic case when the AP is together with the operator, hence the case of *magas*$_1$ and *széles*$_1$. The intonational phrasing of the strings *mint amennyire magas Mari volt* 'than Mary was tall' and *mint amennyire széles a macskaajtó volt* 'than the cat flap was wide' are shown in (24).

As expected, nuclear stress falls on the DP *Mari* 'Mary' and *a macskaajtó* 'the cat flap', in the same way as was seen in connection with (13). There are a few remarks that have to be made here. The adjective (*magas* 'tall' or *széles* 'wide') is outside the scope of main stress assignment: in terms of prosody, it counts as extrametrical. Moreover, this is a position

(24)



which is above the domain of contrastive phrases too: topics carrying new information are found between the lower [Spec; CP] and the FP-projection; in other words, the QP in (24) is not in a contrast position. This explains the difference in the acceptability of GIVEN and F-marked QPs in this position: while it is an optimal position for a GIVEN QP, it is not so for an F-marked one, though definitely not impossible.

In either case, the QP moves up from within the VP into the FP domain; for the sake of simplicity, I hereby assume that the FP can have multiple specifiers and hence the verb is adjacent to the lowest specifier in the syntactic derivation. As a second step of movement, the QP moves up to [Spec; CP] hence the lower copies of the QP — both the one in the VP and the one in the FP — will regularly be deleted at PF (cf Bošković & Nunes 2007 : 44–48, Chomsky 2005, Bobaljik 2002); as a result, these copies will be invisible for determining prosodic structure, as conveniently indicated by the traces in (24).

The question arises why the QP moves to the FP in the first place. This can easily be explained considering that the verbal domain is a phase and if elements are to be moved out of this phase, they have to move to the edge of the domain otherwise they would not be accessible for further syntactic operations after spell-out, cf Chomsky (2005). The FP counts as the edge of the verbal domain (cf also Dyakonova 2009 : 213–215 in connection with Russian *wh*-movement) — in Hungarian, this is reinforced by the fact that the verb moves up to the F head (but not higher, see É. Kiss 2002), thus extending the (vP-)phase, cf also den Dikken (2007), Pesetsky (2007).

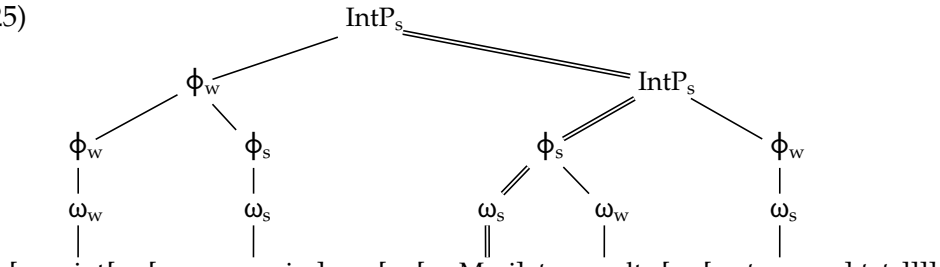
Second, in (24) the QP is at some point adjacent to the verb, which is not the case in (23): as Ishihara & Surányi (2009) point out, QPs cannot normally occupy the structural focus position in Hungarian. Note, however, that in the case of (24) the QP does not have to stay in this position as it

can move further up to take scope over the entire clause. I will not venture to examine the question of why QPs are otherwise ungrammatical in this position, as that would take us far beyond the scope of the present paper; suffice it to say that in comparative subclauses, the QP in question does not violate this constraint as further movement removes it from this position.

Last but not least, while in (23) it was obvious that the topmost phrase in the FP domain was a QP, in (24) the DP—*Mari* 'Mary' or *a macskaajtó* 'the cat flap' — precedes it. Note, however, that this is primarily due to economy: the FP domain is extended only as far as it is necessary to do so. Quantified expressions such as *mindenki* 'everyone' cannot move to topic positions above the FP hence their presence immediately indicates that the edge of the FP domain is filled. By contrast, QPs such as *amennyire magas* 'how much tall' or *amennyire széles* 'how much wide' cannot stay in the FP as the quantifier has to move up to [Spec; CP]. In cases like (24), the movement of the QP out of the FP would leave the preverbal position empty for prosodic structure if the contrasted DP (*Mari* 'Mary' or *a macskaajtó* 'the cat flap') were an adjoined topic, ie invisible for nuclear stress assignment. However, if there is a DP available in a higher [Spec; FP], then the edge feature of the F head is satisfied even after the movement of the QP to [Spec; CP] and nuclear stress can be assigned to this constituent.

Let us now turn to the case when the AP is left in the VP, hence the case of *magas*$_3$ and *széles*$_3$. The intonational phrasing of the strings *mint amennyire Mari volt magas* 'than Mary was tall' and *mint amennyire a macskaajtó volt széles* 'than the cat flap was wide' are shown in (25):

(25)



The only crucial difference from (24) here is that the AP (*magas* 'tall' or *széles* 'wide') remains in its base position in the VP: this is possible because the QP *amennyire* 'how much' is an adjunct within the QP containing the APs and hence may move out on its own, first to [Spec; FP] and finally to the lower [Spec; CP] position.

The postverbal position is quite interesting in terms of encoding information structure: if there are multiple foci in a Hungarian clause, then the secondary focus falls on a constituent that follows the verb, due to the fact that there is only a single focus position pre-verbally (cf Szendrői 2001; Surányi 2007). Note that this is true also in cases such as (23): the fact that the FP can have multiple specifiers does not imply that all elements moving there would be interpreted as foci — on the contrary, it is only one of the XPs that is assigned nuclear stress ad focus interpretation (by default the highest one but stress may be shifted). In this position, as pointed out by Szendrői (2001 : 53–55), elements receive extra stress by an additional prosodic rule and not by the nuclear stress rule — by default, then, it is more economical to move a phrase to the FP domain for assigning stress than to leave it in the VP: in this sense, the secondary focus position is a last resort option for inherently focussed elements that — due to another obligatorily (inherently) focussed element in [Spec; FP] — cannot move up but must still receive focal stress. Apart from these cases, the postverbal domain is de-stressed.

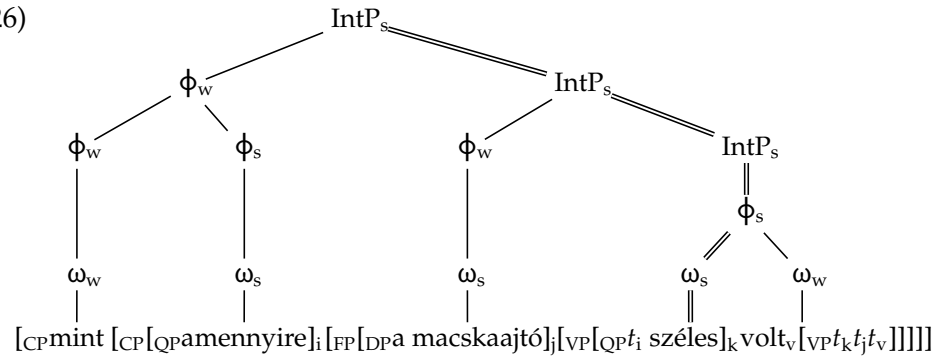
As for (25), this bears two implications. In the case of an F-marked adjective such as *széles* 'wide' in (25), which expresses the main contrast in the comparative subclause, an extra stress rule is required later on for it to receive strong stress; however, a more economical way of doing that would be to move the entire QP (including thus the AP) to the [Spec; FP] position and to leave the AP there, as will be seen soon; hence the markedness of $széles_3$. As for the markedness of $magas_3$, it clearly does not receive extra stress since it is not F-marked; it becomes de-accented but de-accenting would preferably mean deletion, which does not happen here.

Note that the behaviour of Hungarian is similar to what was seen in connection with the English data in (4): while English allows the presence of the F-marked adjective (eg *wide*) in a clause-final position, the presence of a GIVEN adjective here is strongly marked. The reason behind this is that in English the canonical position for focussed elements is the right edge of the clause (cf Szendrői 2001, based on Selkirk 1984, 1986, Nespor & Vogel 1986, Chen 1987, Inkelas 1989, McCarthy & Prince 1993, Neeleman & Weerman 1999, Truckenbrodt 1999 among others). Hence while this is an ideal position for the F-marked adjective, a GIVEN one is not preferred in this position but there is no other position it could overtly appear in — of course, if it is nevertheless present in a clause-final position, it is de-accented (stress being shifted to the subject DP) but de-accenting is preferably deletion, just as in the case of Hungarian in (25). The crucial difference between English and Hungarian is in the canonical realisation of focus, which in Hungarian

is a preverbal position — consequently, the F-marked adjective preferably appears in a position other than the clause-final one.

Let us now turn to the most problematic case, which is when the AP is moved up and then left in the FP, hence the case of *magas*$_2$ and *széles*$_2$. The intonational phrasing of the string *mint amennyire Mari magas volt* 'than Mary was tall' and *mint amennyire a macskaajtó széles volt* 'than the cat flap was wide' are shown in (26):

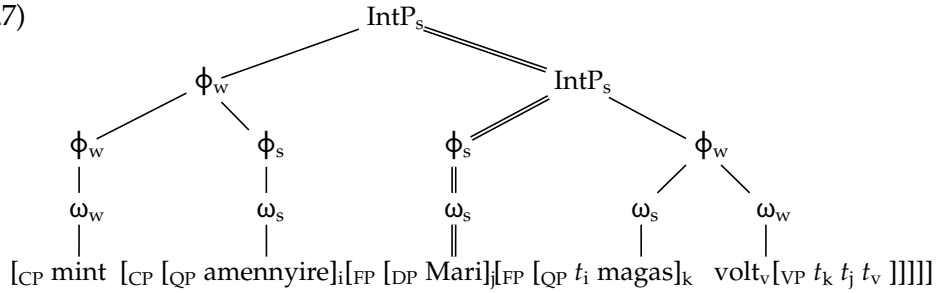
(26)



As can be seen, in this case the DP *a macskaajtó* 'the cat flap' is a topic, ie adjoined to the FP and it counts as extrametrical in terms of prosody. The focus will be the QP *széles* 'wide'. Note that in this case it is not the entire QP that moves up to [Spec; CP]; still, it is not ungrammatical to have the QP immediately before the verb as the quantifier itself has moved up, leaving only the adjective behind. Since this is a canonical contrast position — and as such optimal for an F-marked element —, the acceptability of this construction is higher than that of the other two.

The situation is markedly different when there is a GIVEN adjective in the same position. The intonational phrasing of the string *mint amennyire a macskaajtó széles volt* 'than the cat flap was wide' is shown in (27):

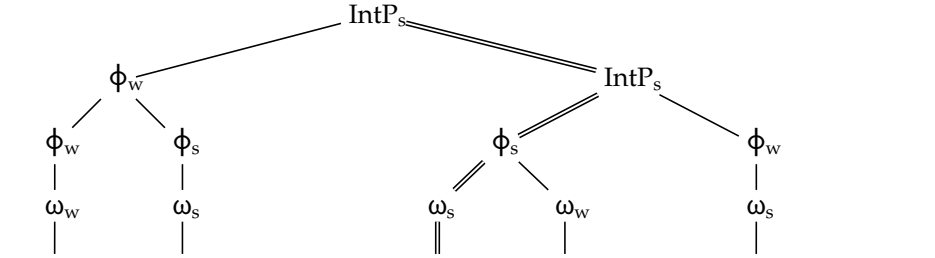
(27)



In this case, the QP *magas* 'tall' is not focussed: nuclear stress is assigned to the DP *Mari* 'Mary'. The main difference between (26) and (27) is that the subject DP is a topic (hence an adjunct) in the former but not in the latter case; as a consequence, in (26) it does not and cannot receive nuclear stress, while it regularly does in (27), cf the discussion in §6 above. In (26), the subject DP is not included in the IntP containing the verb: by default, the FP does not extend higher as the highest QP, which is in this case adjacent to the verb itself. This rule is overwritten in the case of (27), where the accommodation of the DP *Mari* in (27) into the IntP containing the verb is necessary to save the structure: without this, nuclear stress would have to fall on the GIVEN adjective. The construction is essentially the same as the one in (24), with the exception that the adjective does not move out from the FP and hence stress has to be assigned to a DP above the overt QP, which would normally be a topic position — hence the markedness of (27), as opposed to the well-formedness of (26).

The prediction of this is of course that if there is no potential constituent before the GIVEN AP that could bear nuclear stress, the structure does not converge, whereas it is acceptable when the AP is F-marked. This prediction is in fact borne out, as demonstrated in (22): when the subject DP is left behind the verb in its base position within the VP, the structure converges with the F-marked but not with the GIVEN adjective, ie the case of *magas*$_4$ and *széles*$_4$. The intonational phrasing of the strings **mint amennyire magas volt Mari* 'than Mary was tall' and *mint amennyire széles volt a macskaajtó* 'than the cat flap was wide' are shown in (28):

(28)



In this case, the subject DP stays within the VP; being a contrasted element, it can well be accommodated in that position, ie there is clearly no preference for its elimination there. In the case of *széles* 'wide', nuclear stress can be assigned to the AP, which is F-marked and located in the [Spec; FP] position. However, this option is not available for *magas* 'tall':

just as in (27), it cannot receive nuclear stress—however, in (28) there is no constituent available that could be located in a higher [Spec; FP].

One might wonder why (28) is similar to (26) and (27) and not to (24), ie why the AP is not interpreted as moving together with the quantifier *amennyire* 'how much'. However, as should be obvious, in that case the edge feature of the F head would not be satisfied: the only constituent moving to [Spec; FP] — that is, the entire QP — would move further and hence nuclear stress could not be assigned to it, which is clearly not the case with an F-marked adjective. The same problem does not arise in (24), where there is a DP available within the FP domain.

In sum, it should be clear that the acceptability of a GIVEN adjective in the FP-domain is dependent on the presence of another element that may be assigned nuclear stress; this behaviour is predictable on the basis of general syntax–prosody mapping rules that hold in Hungarian. The case of *amennyire* 'how much' shows that there is indeed a difference between GIVEN and F-marked adjectives in comparative subclauses, though not exactly in the same way as in English; this difference is not recognisable in the case of *amilyen* 'how', which cannot be moved out of the QP on its own and hence the AP taken by *amilyen* will always be located in the [Spec; CP] position.

8 Conclusion

The aim of this paper was to investigate the syntax–prosody mapping of Hungarian comparative subclauses, with the aim of explaining certain syntactic differences that are rooted in distinctive prosodic phrasing. It was shown that while Hungarian largely allows the presence of a QP (containing a quantifier operator and a lexical AP) in the subclause irrespectively of whether the AP is GIVEN or F-marked, information structure still plays a crucial role in determining the possible structures. I demonstrated that if the operator is separable from the AP, the possible positions of the AP are determined by the syntax–prosody mapping operative in comparative subclauses, which makes certain positions available, preferable or impossible for GIVEN and F-marked elements differently.

REFERENCES

Bácskai-Atkári, Júlia. 2010. Parametric Variation and Comparative Deletion. *The Even Yearbook* 9 : 1–21.

Bácskai-Atkári, Júlia. 2012. Reducing Attributive Comparative Deletion. *The Even Yearbook* 10 : 1–25.

Bobaljik, Jonathan David. 2002. A-chains at the PF-interface: Copies and 'Covert' Movement. *Natural Language and Linguistic Theory* 20/2 : 197–267.

Bošković, Željko and Jairo Nunes. 2007. The Copy Theory of Movement: A View from PF. In: Norbert Corver and Jairo Nunes (eds.), *The Copy Theory of Movement.* Amsterdam: John Benjamins. 13–74.

Bródy, Michael. 1990. Some Remarks on the Focus Field in Hungarian. *UCL Working Papers in Linguistics* 2 : 201–225.

Bródy, Michael. 1995. Focus and Checking Theory. In: István Kenesei (ed.), *Approaches to Hungarian 5: Levels and Structures.* Szeged: JATE. 31–43.

Chen, Matthew Y. 1987. The Syntax of Xiamen Tone Sandhi. *Phonology Yearbook* 4 : 109–150.

Chomsky, Noam. 1977. On WH-movement. In: Peter W. Culicover, Thomas Wasow, and Adrian Akmajian (eds.), *Formal Syntax.* New York: Academic Press. 71–132.

Chomsky, Noam. 2005. *On Phases.* Ms, Massachusetts Institute of Technology, Cambridge, MA.

den Dikken, Marcel. 2007. Phase Extension: Contours of a Theory of the Role of Head Movement in Phrasal Extraction. *Theoretical Linguistics* 33/1 : 1–41.

Dyakonova, Marina. 2009. *A Phase-based Approach to Russian Free Word Order.* Utrecht: LOT.

É. Kiss, Katalin. 2002. *The Syntax of Hungarian.* Cambridge: Cambridge University Press.

Inkelas, Sharon. 1989. *Prosodic Constituency in the Lexicon.* Doctoral dissertation, Stanford University.

Ishihara, Shinichiro and Balázs Surányi. 2009. *Syntax–Prosody Mapping and Topic–Comment Structure in Hungarian.* Talk delivered to: Workshop on Prosody and Meaning, Barcelona, 17–18 September 2009. (www.sfb632.uni-potsdam.de/∼shin/talks/ishihara-suranyi-talk2009-prosody-meaning-pr.pdf)

Kántor, Gergely. 2008. Komparatív korrelatív szerkezetek a magyarban. *Nyelvtudományi Közlemények* 105 : 134–163.

Klein, Ewan. 1980. A Semantics for Positive and Comparative Adjectives. *Linguistics and Philosophy* 4 : 1–45.

Larson, Richard K. 1988. Scope and Comparatives. *Linguistics and Philosophy* 11 : 1–26.

McCarthy, John and Alan Prince. 1993. Generalised Alignment. In: Geert Booij and Jaap van Marle (eds.), *Yearbook of Morphology.* Dordrecht: Kluwer. 79–154.

Neeleman, Ad and Fred Weerman. 1999. *Flexible Syntax — A Theory of Case and Arguments.* Dordrecht: Kluwer.

Nespor, Marina and Irene Vogel. 1986. *Prosodic Phonology.* Dordrecht: Foris.

Pesetsky, David. 2007. Property Delay (Remarks on "Phase Extension" by Marcel den Dikken). *Theoretical Linguistics* 33/1 : 105–120.

Sato, Yosuke and Yoshihito Dobashi. 2012. Functional Categories and Prosodic Phrasing in English: Evidence from That-Trace Effects and Pronominal Object Shift. LingBuzz (National University of Singapore — Niigata University). Retrieved on 26 November 2012 from ling.auf.net/lingbuzz/001499.

Selkirk, Elizabeth. 1984. *Phonology and Syntax: The Relation between Sound and Structure.* Cambridge, MA: The MIT Press.

Selkirk, Elizabeth. 1986. On Derived Domains in Sentence Phonology. *Phonology Yearbook* 3 : 371–405.

Surányi, Balázs. 2007. Focus Structure and the Interpretation of Multiple Questions. In: Kerstin Schwabe and Susanne Winkler (eds.), *On Information Structure, Meaning and Form.* Amsterdam: John Benjamins. 229–253.

Szendrői, Kriszta. 2001. *Focus and the Phonology–Syntax Interface.* Doctoral dissertation, University College London.

Truckenbrodt, Hubert. 1999. On the Relation between Syntactic Phrases and Phonological Phrases. *Linguistic Inquiry* 30/2 : 219–255.

Júlia Bácskai-Atkári
julia.bacskai-atkari@uni-potsdam.de
Institute for Linguistics
University of Potsdam

278. oldal: üres

Is there final devoicing in Spanish?

Zsuzsanna Bárkányi

Why is this question interesting in the case of a language which hardly has any non-sonorant codas and in which voicing contrast is limited to stops? This article aims to be a tiny step in the research of pre-sonorant voicing, which — as discussed in §1 — is constrained to languages with final delaryngealization. We will answer the question raised above by the help of an acoustic analysis examining 6 native speakers' laboratory speech the realizations of utterance-final /b/, /d/ and /g/ presented in §3 after giving a short introduction to the syllable structure of Spanish in §2.

1 Pre-sonorant voicing

Pre-sonorant voicing, ie when a voiceless/devoiced obstruent assimilates in voicing to a following sonorant, has raised recurrent interest among phonologist mostly due to the apparent activity of a non-contrastively specified segment acting as a trigger in voicing assimilation. In most languages pre-sonorant voicing targets word-final (or syllable final) obstruents. In some languages vowels pattern with sonorants in that they also trigger voicing assimilation, while in others vowels do not trigger voicing, or contrarily, it is mostly vowels that voice the preceding obstruent and not sonorant consonants. The process often targets only subclasses of obstruents. In some accounts sonorant voicing seems to be a gradient phonetic process, while in others it shows up as categorical.

Pre-sonorant voicing is generally restricted to word-final position. An example is Slovak as reported in Pauliny (1979) and Rubach (1994). In Slovak a word-final obstruent is realized as voiced if it is followed by a voiced obstruent, (1a), a sonorant consonant, (1b), or a vowel, (1c), in the next word, the process applies to clusters as well, (1d), but is not operative within the word, (1e).

(1) *Pre-sonorant voicing in Slovak* (Pauliny 1979 : 152–153)
   a. chlap dochodí [xlab doxoɟiː] 'man comes'
   b. vták letí [ftaːg leciː] 'bird is flying'
   c. chlap ani nejedol [xlab aɲi ɲɛjɛdol] 'man didn't even eat'
   d. jesť a piť [jɛzʃ a pic] 'eat and drink'
   e. chlap+mi [xlapmi] 'man-INSTR'

The same positional restriction holds for Ecuadorian Spanish as well (Robinson 1979 and Lipski 1989), or Dutch (De Schutter & Taeldeman 1986 cited by Strycharczuk & Simon, to appear). In the Ecuadorian variety of Spanish /s/ undergoes voicing if it is followed by a vowel in the next word, (2a), however, pre-vocalic voicing does not apply within the word, (2b). Note that there is re-syllabification in Spanish across the word boundary. In Dutch word-final fricatives can be voiced before vowel-initial words, (3a) and in compounds, (3b), but not within the word, (3c).

(2) a. has ido [a.zi.ðo] 'you have gone'
   b. ha sido [a.si.ðo] 'has been'

(3) a. dat mens is [dɑt.mɛn.zɪs] 'that person is'
   (Strycharczuk & Simon, to appear: 2)
   b. ras+echt [rɑ.zɛχt] 'pure bred'
   c. jasen [jɑ.sən] 'coats'

As for the trigger of pre-sonorant voicing more variation is observed among languages. In some languages—like Slovak, shown in (1), Kraków Polish (Rubach 1996) or West-Flemish (Strycharczuk & Simon, to appear)—sonorant consonants and vowels pattern together and induce voicing assimilation. West-Flemish differs from the other Southern Dutch dialects in that in those dialects, as reported in De Schutter & Taeldeman (1986) and shown in (3), only vowels voice the final fricative of the preceding word, while in West-Flemish fricatives are voiced before sonorant consonants as well across word-boundaries: *zes jaar* [zɛz jaːr] 'six years'. Similarly to the Southern Dutch dialects, /s/-voicing in Ecuadorian Spanish is also induced only by vowels, (2). Standard Peninsular Spanish is exactly the other way round (Hualde 2005): /s/ is voiced if followed by a voiced obstruent or a sonorant consonant, (4a), but is not voiced in pre-vocalic position, (4b), the process is not limited to word-final position, syllable-final /s/ also undergoes voicing.

(4) a. isla ['iz.la] 'island'
las minas [laz.'mi.nas] 'the mines'
b. presente [pɾɛ.'sɛn.tɛ] 'present'
las alas [la.'sa.las] 'the wings'

It has been reported in a number of cases that sonorant-voicing targets only subclasses of obstruents. In Dutch only fricatives undergo voicing assimilation, in Spanish only /s/, as shown above. Simon (2010) found pre-sonorant voicing in fricatives, but not in stops in the production of West-Flemish speakers. An illustrative example is provided by Jiménez & Lloret (2008) who report a dialect continuum in Catalan: in Central Valencian there is no voicing of word-final consonants before vowels, Alguerés and Valencian dialect B have sibilant voicing, in Valencian dialect A apart from word-final sibilants, alveolar affricates also become voiced in prevocalic position, Central Catalan has variable /f/ voicing as well, while in Alicantino all word-final obstruents undergo voicing when followed by a vowel. Note that all the languages to our knowledge that have pre-sonorant voicing also have word-final devoicing, more precisely, these languages are traditionally considered to have voicing neutralization in final position. In this paper we will not tackle the question why this should be so, neither will we dwell upon the issue of complete vs partial neutralization in this context. We will only try to find out whether the claim that "those languages that have pre-sonorant voicing also have word-final devoicing" holds for Spanish or not. Although the question is very simple it is not so straightforward to find the answer due to the phonotactic restrictions holding in Spanish.

2 The syllable structure of Spanish

According to Quilis (1993) 68.8% of Spanish syllables are open, the vast majority of codas consist of a sonorant consonant or /s/ (or rarely both in this order, eg *transcripción* 'transcription'). In the present work we will not consider the well-known coda aspiration which to a varying extent characterizes basically all Spanish varieties, neither will we talk about the so called *spirantization* of voiced stops, we will rather focus on obstruents in coda position. Stops in post-nuclear position rarely contrast (never in voicing) and occur in words that are not very frequent, eg *acto* 'act' vs *apto* 'apt', *absorción* 'absorption' vs *adsorción* 'adsorption'. Their actual realizations cover a wide range, the sequence /kt/, for instance, can appear as [kt], [gt], [ɣt], [θt], [xt], [ht], [st] or even vocalized (Quilis 1993). Fricatives, apart

from /s/, do not occur in word-internal coda position.[1] As for word-final position, the only stop that occurs in the native vocabulary is /d/. Its realization depends on the regional dialect and style, it can be deleted, especially in polysyllabic words; generally it is described as [ð] or [θ], while in Catalan speaking territories as [t]. All the other stops only occur in recent borrowings, which means that it is quite forced to speak about contrast (or neutralization) in this position. According to Hualde (2005 : 148–149) /p/ and /t/ are either realized as such, or are deleted. /b/ has a word-specific pronunciation, eg *pub* is realized as /paf/ by most speakers, while *club* contains a final [b], [β], [p] or is deleted. As for the velars, both /k/ and /g/ can be realized as [k], [g] and [ɣ], while word-final /g/ can also appear as [x]. Hualde also says that "word-internal coda plosives were probably on their way out of the language. Before the Spanish Academy was established we often find forms like *dino* for *digno* 'worthy' [. . .] The Academy, however, decided to keep many of these etymological consonants in the orthography" (2005 : 147). Nowdays most educated people generally pronounce these consonants, although there are many exceptions. This explains the substantial variation in the pronunciation mentioned above, and the fact that in lower sociolects and regional dialects the loss of these coda consonants becomes more frequent.

table 1: Spanish obstruents

	labial		dental/alveolar		alveo-palatal		palatal		velar	
	vd	vless	vd	vless	vd	vless	vd	vless	vd	vless
stops	b	p	d	t					g	k
fricatives		f		s/θ						x
affricate						ʧ				

Turning to fricatives, apart from /ʝ/ Spanish has no voiced fricatives (see table 1 for Spanish obstruents). This corresponds to universal tendencies, since to maintain friction and phonation at the same time contradictory articulatory targets are necessary (Ohala 1983), which causes an uneasy balance. In order to produce turbulent noise a high velocity of airflow is needed, which can be obtained by open glottis and a narrow constriction in the oral cavity. This also means that the air pressure below the glottis is smaller or equals that within the oral cavity. On the other hand, in order to produce voicing, vocal folds should be loosely compressed so the air pres-

[1] /g/ in words like *signo* 'sign', *pragmática* 'pragmatics' is realized as [χ] in northern Spanish.

sure builds up below the glottis. If supraglottal pressure exceeds subglottal pressure, vocal fold vibration stops and voicing disappears. This explains why we find languages that have voiceless fricatives but no voiced fricatives (eg Korean) and not the other way round. Spanish is almost like that, note that /j/ in coda position is realized as the glide element of a closing diphthong: *rey* [reɪ̯] 'king'. Let us now look at how our speakers pronounce word-final voiced stops.

3 The voicing of final /b/, /d/ and /g/

The word-final voiced stops analyzed in this paper form part of a larger experiment on voicing assimilation, especially sonorant voicing in Spanish. A laboratory speech production experiment was carried out to study the voicing properties of utterance-final /b/, /d/ and /g/ in Northern(-Central) Peninsular Spanish. Six subjects (3 male and 3 female) participated in the experiment, they were all native speakers of this dialect and students or professors at the University of Oviedo unaware of the purpose of the experiment. Their ages ranged between 22–41 years, none of them reported any speaking or hearing disorder.

3.1 Material and methods

The test words were *pub, virtud* 'virtue, power' and *blog* in utterance-final position, all stressed before the segment under scrutiny. Stimuli were embedded in carrier sentences. The test also contained final /t/ and /p/ for the sake of comparison.

(5) a. Al final de la calle hay un **pub.**
'At the end of the road there is a pub.'
b. La bruja cogió la vara de **virtud.**
'The witch took the magic wand.'
c. Atalaya es el título de un **blog.**
'Atalaya is the name of a blog.'
d. A los niños les gusta el **donut.**
'Children like the donut.'
e. A todos nos encanta el **ketchup.**
'We all love ketchup.'

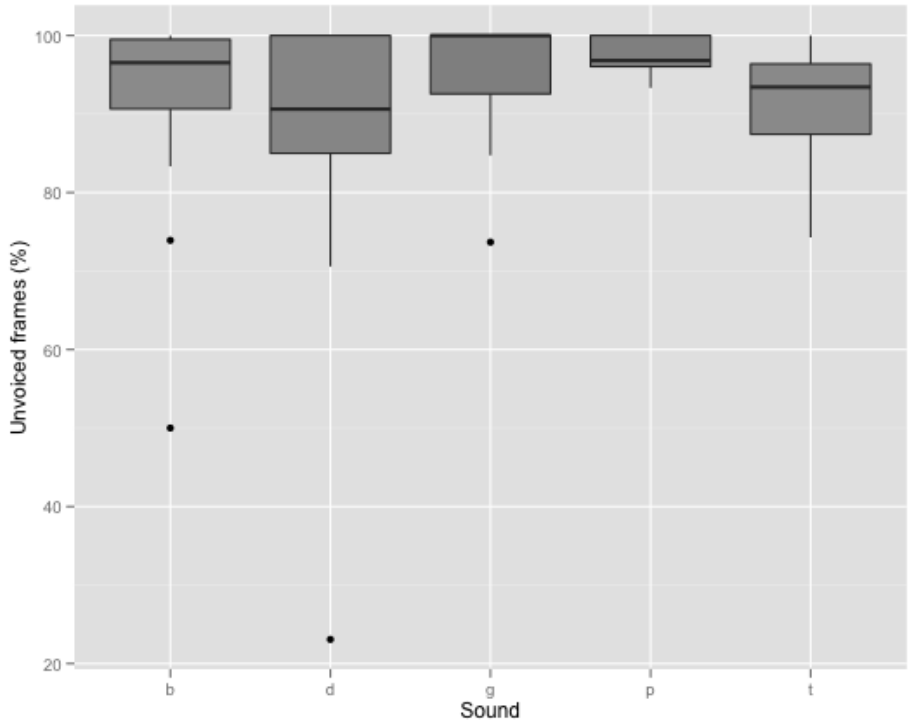
Subjects read the test sentences and fillers from screen in randomized order, which was generated by SpeechRecorder (Draxler & Jänsch 2012). Each test sentence was read 5 times, but the first reading was considered

as the familiarization phase and was not taken into consideration. This means one occurrence by 6 speakers by 4 readings, which gives 24 realizations for each segment. Recordings were made in a sound-attenuated room by a Sony ECM-MS907 microphone to a laptop through an M-Audio MobilePre USB preamplifier external sound card, the recordings were sampled at 44100Hz. The spectrograms were segmented manually by the author and voicing measurements were carried out in Praat (version 5.3.12; Boersma & Weenik 2005) with default settings (pitch range: 75 Hz–500 Hz, maximum period factor: 1.3, maximum amplitude factor: 1.6, pitch setting was optimized for voice analysis) and checked manually.

3.2 Results and discussion

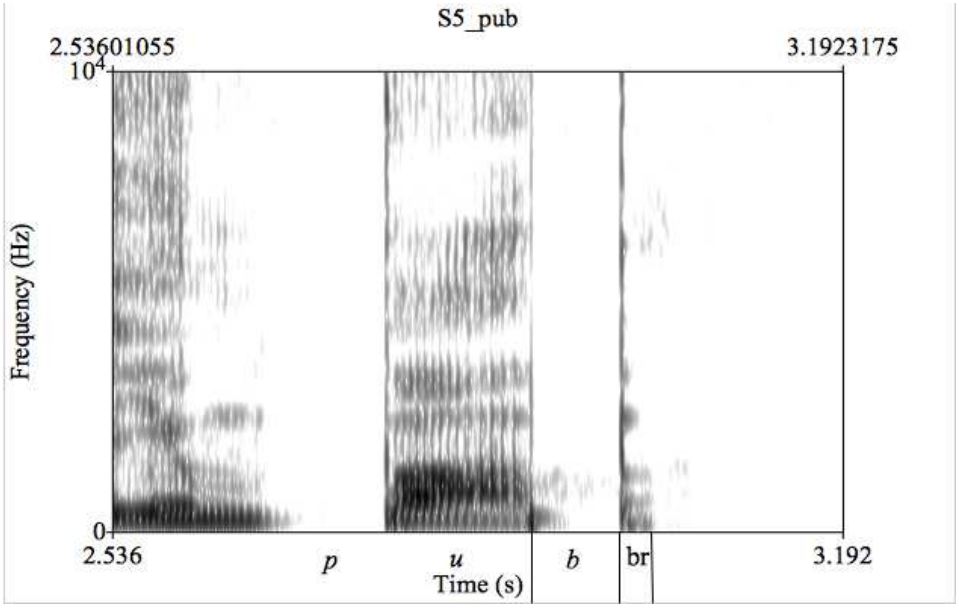
The overall results of the experiment are displayed in figure 1. All the stops under scrutiny are realized voiceless in utterance-final position (on average, with 90% or more of unvoiced frames), although, the actual realizations, as expected, are quite varied.

figure 1: The voicing of final /b/, /d/, /g/, /p/ and /t/ by all speakers



The word *pub* according to Hualde (2005) is realized by Spaniards as [paf]. This is borne out as a consistent strategy only for two out of our six speakers, they realized all instances of final /b/ as [f]. Three speakers preferred [p], but two of them often pronounced it with no release or in a few cases as a voiceless bilabial fricative. There was only one speaker who pronounced both *pub* and *ketchup* with a final [p]. His *p*'s in the first word were consistently somewhat more voiced than in the second word (87.61% of unvoiced frames opposed to 97.13% of unvoiced frames), voicing entering from the preceding vowel and dying out during the closure phase. In one case (figure 2) with a fair amount of phonation during closure and a schwa-like burst, this was one of the most voiced realizations of the final segment in *pub* with 73.91% of unvoiced frames for the whole segment (closure+burst). If this item is removed from the calculations, the average of unvoiced frames for the final stop in *pub* for speaker 5 rises to 91.5%. The sixth speaker deleted the final consonant in half of the cases and once pronounced a half-voiced labiodental stop (50% of unvoiced frames) indicated as a black dot on the boxplot in figure 1.

figure 2: Spectrogram of the word pub *pronounced by speaker 5*



Final /p/ in the word *ketchup* was generally realized as such. Two speakers, however, consistently in all the test words pronounced [kepʧu], that is to say, deleted the final stop that violates the phonotactics of Span-

ish, but still preserved the segment in a different position. Speaker 4 pronounced [kepʧu] in 50% of the cases and [kepʧup] in the other half.

Utterance-final /t/ is realized as [t] by all the speakers in all the cases. Only speaker 5 realized /d/ as well consistently as [t], the same speaker who pronounced both *pub* and *ketchup* with [p], again with a slight difference in their phonetic voicing: /d/ contained 91.75% of unvoiced frames, while this value is 94.68% for /t/. This data is not enough to draw any conclusions about voicing contrast in this position, firstly, because more data are needed to carry out statistical analyses, but it is hard to obtain such data since final /d/ is seldom realized as [t] by speakers of Northern Peninsular Spanish. Secondly, because it is difficult to imagine that speakers of Spanish are sensitive to 3–6% of voicing in the case of almost completely devoiced segments. Obviously, only perceptual experiments could clarify this doubt. Speaker 6 also pronounced a dental stop in this case, but in one case it was an articulatory gesture perceptible only from the vowel transition rather than a proper consonant, therefore, impossible to carry out acoustic measurements on it. In two cases he produced a very short closure (44 ms and 25 ms, respectively) followed by a schwa-like release, both of these segments are significantly more voiced than /d/ in final position generally is (23% of unvoiced frames and 70.58% of unvoiced frames, respectively) showing up as black dots on the boxplot in figure 1. Speaker 1 deleted the final consonant of *virtud* in half of the cases, all the other instances for all our speakers are realized as [θ] as illustrated in figure 3.

The individual strategies for the "violating" final stops appear in the realizations of the test word *blog* as well. Most instances of utterance-final /g/ were realized as a voiceless velar or uvular fricative (figure 4), which is not surprising, since this fricative appears in final position in a handful of mostly marginal patrimonial words (eg *boj* 'shoe-tree') only one of which is frequent and known by all Spanish speakers (*reloj* 'watch'). Speaker 1 deleted the final segment of *blog* in half of the cases, note that this speaker applied the same strategy for final /d/ as well. Speaker 5 again consistently pronounced a stop in this position (as for *pub* and *virtud*), in this case [k] sometimes with a schwa-like release and in the speech of speaker 6 we observe the same vacillation as mentioned earlier: he too preferred [k], but also produced [x]/[h] as the final consonant of *blog*.

4 Conclusions

We can claim that in accordance with other languages with pre-sonorant voicing, Spanish also shows word-final devoicing. The actual realization of stop-final words is speaker and word-dependent. Speakers mostly real-

figure 3: Spectrogram of the word virtud *pronounced by speaker 1*

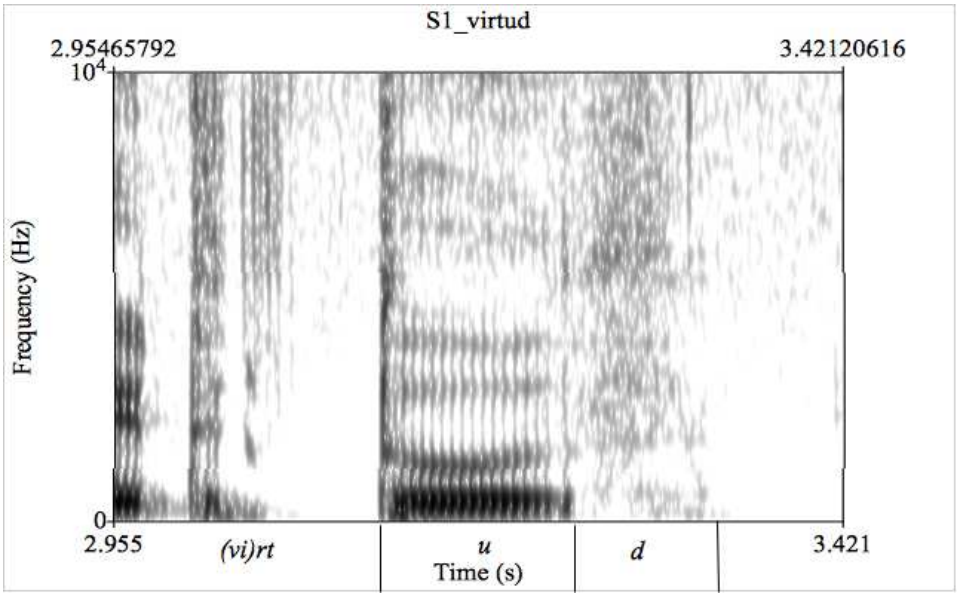
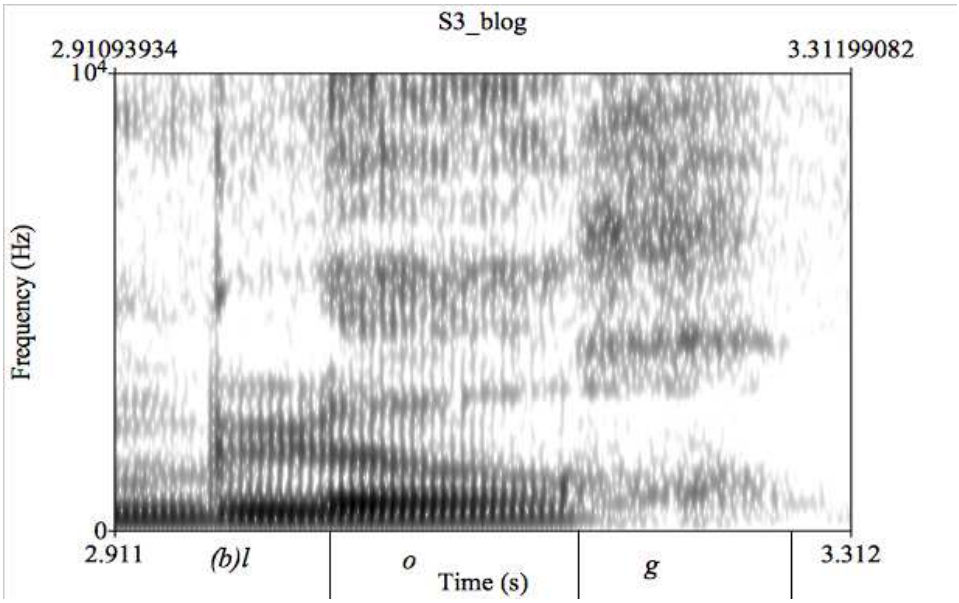


figure 4: Spectrogram of the word blog *pronounced by speaker 3*



ize these segments as voiceless fricatives, in our data one speaker consistently and another one to some extent pronounced them as voiceless stops. Independently of the manner of articulation, the final consonant is almost without exceptions realized with no phonation.

REFERENCES

Boersma, Paul and David Weenik. 2005. Praat: Doing phonetics by computer (version 4.3.19). Retrieved on 20 June 2005 from www.praat.org.

De Schutter, Georges and Johan Taeldeman. 1986. Assimilatie van Stem in de Zuidelijke Nederlandse Dialekten. In: Magda Devos and Johan Taeldeman (eds.), *Vruchten van z'n akker: opstellen van (oud-) medewerkers en oud-studenten voor Prof. V. F. Vanacker.* Ghent: Seminaire voor Nederlands Taalkunde. 91–133.

Draxler, Christoph and Klaus Jänsch. 2012. SpeechRecorder — a universal platform independent multi-channel audio recording software (version 2.2.1). Retrieved on 30 March 2012 from www.phonetik.uni-muenchen.de/Bas/software/speechrecorder/.

Hualde, José Ignacio. 2005. *The Sounds of Spanish.* Cambridge: Cambridge University Press.

Jiménez, Jesús and Maria-Rosa Lloret. 2008. Asimetrías perceptivas y similitud articulatiora en la asimilación de sonoridad del catalán. *Cuadernos de Lingüística del I.U.I. Ortega y Gasset* 15 : 71–90.

Lipski, John. 1989. /s/ voicing in Ecuadoran Spanish: Patterns and Principles of Consonantal Modification. *Lingua* 79 : 49–71.

Ohala, John J. 1983. The origin of sound patterns in the vocal tract constraints. In: Peter F. MacNeilage (ed.), *The production of speech.* New York: Springer-Verlag. 189–216.

Pauliny, Eugén. 1979. *Fonológia slovenského jazyka.* Bratislava: Slovenské pedagogické nakladatel'stvo.

Quilis, Antonio. 1993. *Tratado de fonética y fonología españolas.* Madrid: Gredos.

Robinson, Kimball L. 1979. On the voicing of intervocalic s in the Ecuadorian highlands. *Romance Philology* 33 : 132–143.

Rubach, Jerzy. 1994. *The lexical phonology of Slovak.* Oxford: Oxford University Press.

Rubach, Jerzy. 1996. Nonsyllabic analysis of voice assimilation in Polish. *Linguistic Inquiry* 27 : 69–110.

Simon, Ellen. 2010. Phonological transfer of voicing and devoicing rules. Evidence from L1 Dutch and L2 English conversational speech. *Language Sciences* 32 : 63–86.

Strycharczuk, Patrycja and Ellen Simon. to appear. Obstruents before sonorants. The case of West-Flemish. *Natural Language and Linguistic Theory.*

Zsuzsanna Bárkányi
bzsu2009@gmail.com
Eötvös Loránd University
Budapest

Measuring acoustic correlates of voicing in stops and fricatives

Zoltán G. Kiss

1 Introduction

The aim of this paper is to enumerate the various acoustic correlates of voicing in stops and fricatives and how these correlates can be measured in the phonetic analysis software, Praat (Boersma & Weenink 2012). In addition, the paper aims to asses the validity and reliability of these correlates and measurement methods in comparison with visual inspection of waveforms and spectrograms.

2 Data for the acoustic measurements

The data in this paper make use of recordings of standard Hungarian from one female subject (aged in her early 20s). This recording was part of an independent research into sonorant voicing (Bárkányi & G. Kiss 2012). This paper focuses on the voiceless alveolar stop /t/ and the voiceless alveolar fricative /s/ in three positions: (i) intervocalic, (ii) before /p/, and (iii) before /b/. The test words were *net* 'net' and *szesz* 'alcohol'. These words were embedded in carrier sentences, which the subject had to read out from a monitor at a normal, casual speech tempo. The sentences were recorded in a sound proof cabin onto a laptop computer through an M-Audio MobilePre USB preamplifier, using a Sony ECM-MS907 microphone. As the aim of the paper is to enumerate and illustrate the various voicing measurement methods and not to carry out thorough acoustic and statistical analyses, only one token was chosen for each segment in each position, thus there were altogether six tokens. The test sentences are shown in (1)

and (2), the underlined words constitute the focus of the acoustic measurements of this paper.[1]

(1) a. A netet tartják az évezred találmányának.
'The internet is considered to be the discovery of the millenium.'
b. Egy netprobléma lépett fel.
'An internet problem occurred.' (referred to as *netpro* in the text)
c. A netbeállításokon múlik az egész.
'All depends on the internet settings.' (referred to as *netbe* in the text)

(2) a. A szeszes italok körében jól ismert.
'It is well-known among alcoholic drinks.'
b. A szesz pirosra színezte a főzetet.
'The alcohol coloured the concoction red.' (referred to as *szeszpi* in the text)
c. Sajnos a szesz belefolyt a szemébe.
'Unfortunately, the alcohol got into his eyes.' (referred to as *szeszbe* in the text)

3 Segmentation and manual measurements of material

Segmentation of the test words were carried out manually by visual inspection in Praat with the help of 5-ms-long Gaussian window broadband spectrograms (bandwidth = 260 Hz) and the waveforms of the recordings in the following way. In the case of /t/, the boundary between the preceding vowel and the stop was placed where the formants cease completely. A separate section was marked for the release noise, where release noise is defined as a sudden transient aperiodic burst noise in both the spectrogram and the waveform. The boundary between the release and the following vowel was placed where the burst noise ceases, the formants appear and the periodic wave begins (see figure 1). The boundary between /t/ and the following stops was marked where there was any visual sign of the release of /t/, and simply with the help of listening to the recording (see figure 2). In all the test words used in this paper there was always a short burst noise between the two stops, which made the segmentation relatively straightforward.

[1] The six test sentences, together with their TextGrid files, can be found at tinyurl.com/buogokw

In the case of /s/, the boundary between the preceding vowel and the fricative was placed where the first noisy marks (aperiodicity) appear in the waveform and where the formants cease in the spectrogram. The end of the fricative and the beginning of the following vowel was marked in the position where the waveform does not show aperiodicity anymore, and the periodic wave begins, plus where the formants of the vowel first appear (see figure 3). The boundary between /s/ and the following stops was placed where the waveform becomes almost completely flat, free of any aperiodicity (see figure 4).

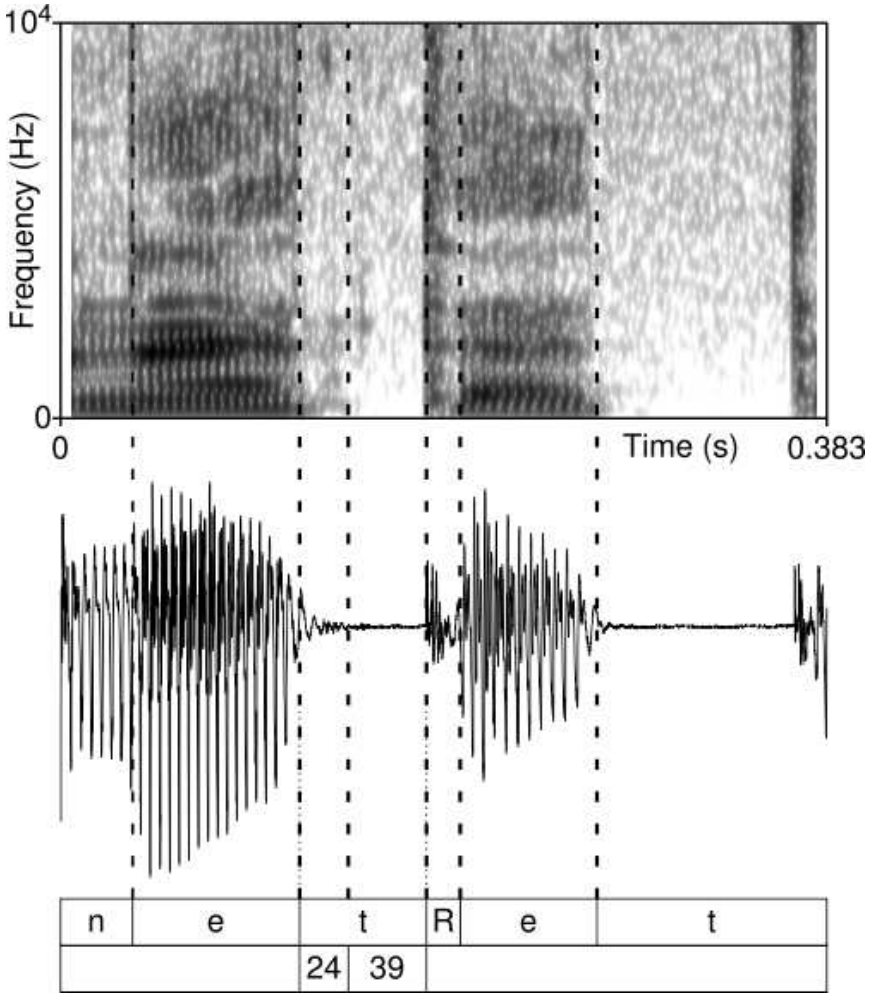
Phonetic voicing can be visually inspected in waveforms by checking for periodic waves, and in spectrograms by looking for energy at low frequencies around 100–300 Hz, ie looking for the presence of the fundamental frequency f_0, the most important acoustic correlate of vocal fold vibration. For the purposes of the current investigation, a separate tier was designated for calculating the percentage of phonetic voicing during the closure portion of /t/ and the constriction phase of /s/. The "voiced" portion was marked wherever signs of periodic waves could be seen in the waveform, this constituted the primary visual cue for vocal fold vibration. As a secondary cue, the low-frequency energy of the spectrogram was also used to mark the boundary of the voiced domain. In the tokens used in this paper, these voiced sections always begin from the boundary between the preceding vowel and the following /t/ or /s/. The length of the voiced and the voiceless domains were measured (in Praat: Query, Get selection length), and the percentage of the *voiceless* section to the whole domain was calculated. If the whole of the segment was voiced, no separate tier was created to measure voicing.

Figure 1 shows the spectrogram and waveform of *netet* 'net-ACC'. Visual inspection indicates that /t/ is only slightly voiced, the vocal fold vibration continues from the preceding vowel, but ceases very rapidly. The percentage of the voiceless section is 62%.

In the case of *netprobléma* 'net problem' (figure 2, left), the situation is very similar to *netet*: voicing continues into the closure phase of /t/ but ceases rapidly. The unvoiced section is 75%. In *netbeállításokon* 'net settings-SUPERESS', the closure portion of /t/ is clearly voiced all through (notice, however, that the following /b/ is actually only very slightly voiced), hence the percentage of the unvoiced section is 0% (see figure 2, right).

In the case of the fricative /s/, it is more difficult to visually locate the voiced sections because the intense frication noise of the fricative at high frequencies (around 8000–10 000 Hz) masks the potential periodicity of the low frequencies. For this reason it is instructive to filter out the high

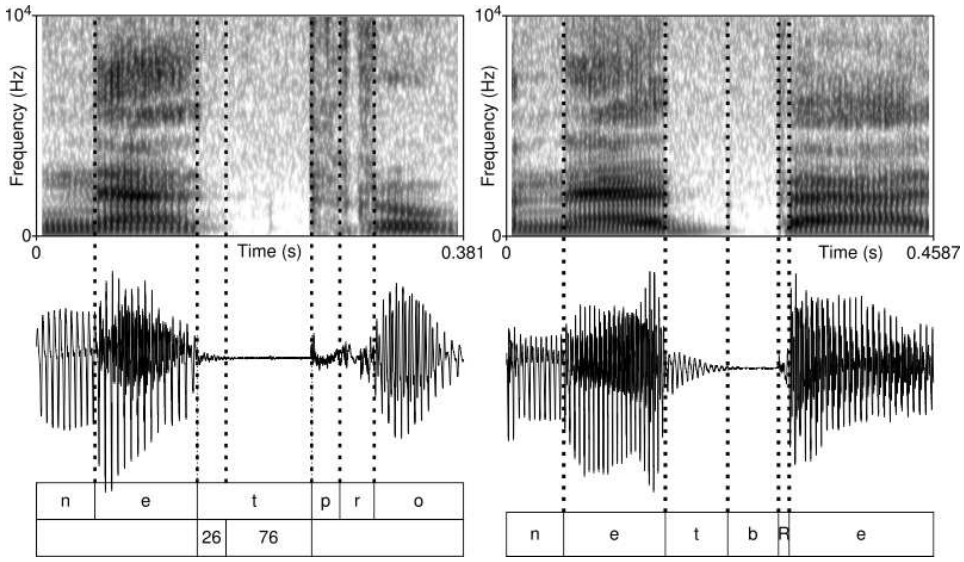
figure 1: Spectrogram and waveform of netet *'net-*ACC*'. The numbers at the bottom indicate the length (in ms) of the voiced+voiceless portion of the closure, 'R' stands for the release noise*



frequencies so that the waveform may only contain the low frequencies. For the purposes of this paper, a low-pass filter was used between 0–500 Hz (with a smoothing of 100 Hz) for the creation of the waveforms to preserve only the low frequencies of the vocal fold vibration (in Praat: Filter Pass Hann band, from frequency = 0 Hz, to frequency = 500 Hz, smoothing = 100 Hz).

Figure 3 shows the spectrogram and filtered waveform of *(sz)eszes* 'alcoholic (drink)'. /s/ is only partially voiced, just like in the case of *netet* and

figure 2: Spectrogram and waveform of netpro(bléma) *'net problem' (left) and* netbe(állításokon) *'net settings-*SUPERESS*' (right). 'R' stands for the release noise. The numbers at the bottom indicate the length (in ms) of the voiced+voiceless portion of the closure, if the closure was voiced throughout, no number is given*



netprobléma, as a result of the continuation of vocal fold vibration from the preceding vowel. The voiced section is 19 ms long, the voiceless portion is 69 ms. The voiceless domain is thus 78% of the whole fricative portion.

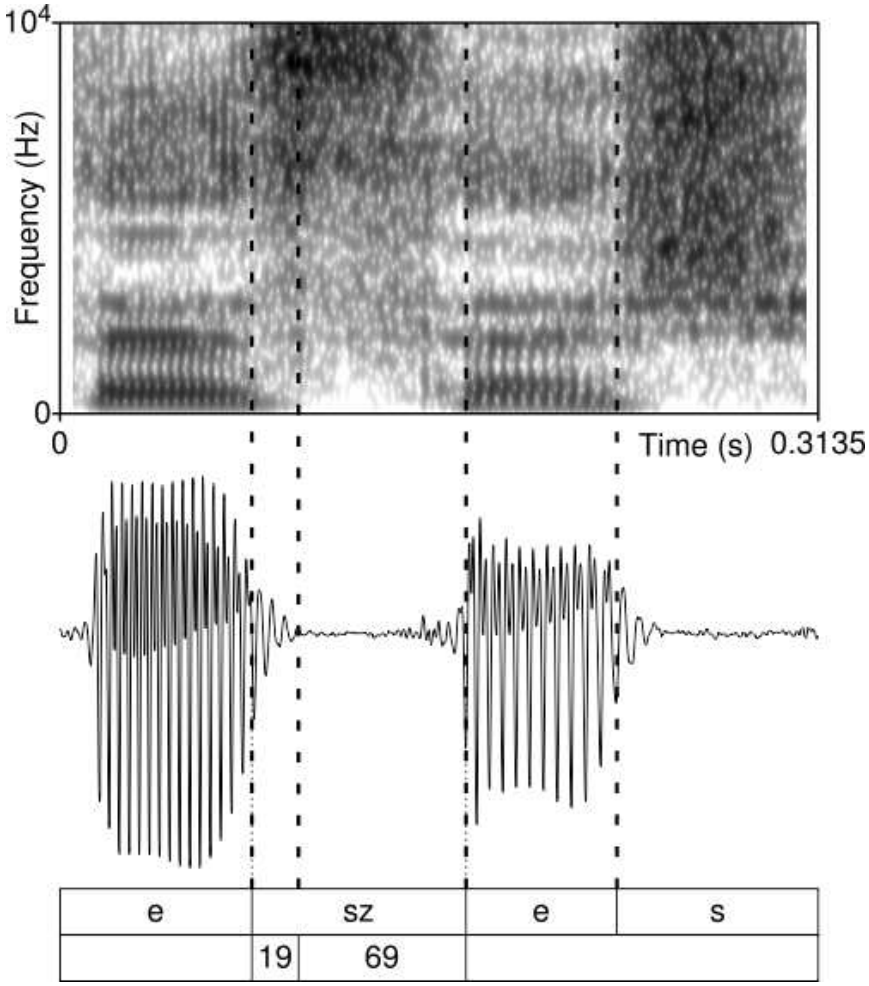
Figure 4 exhibits /s/ before /p/ in *(sz)esz pi(rosra)* 'alcohol red-SUBLAT' (left) and before /b/ in *(sz)esz be(lefolyt)* 'alcohol flowed-ILLAT' (right). In the case of *szeszpi*, the figure shows that there is only a short section of /s/ that is voiced (13 ms). The voiceless section is 38 ms long, which is 75% of the whole fricative domain. /s/ in *szeszbe* is voiced all through the fricative constriction, which is clearly indicated by periodicity of the filtered waveform (in this case, the following /b/ is also fully voiced). Thus the percentage of the voiceless portion is 0%.

To sum up, manual/visual inspection of spectrograms and waveforms tell us that /t/ and /s/ are fully voiced before /b/, but only partially voiced intervocalically and before /p/. The results are summarized in table 1.

table 1: Percent of unvoiced portions manually measured for all six tokens

netet	netpro	netbe	szeszes	szeszpi	szeszbe
62	75	0	78	75	0

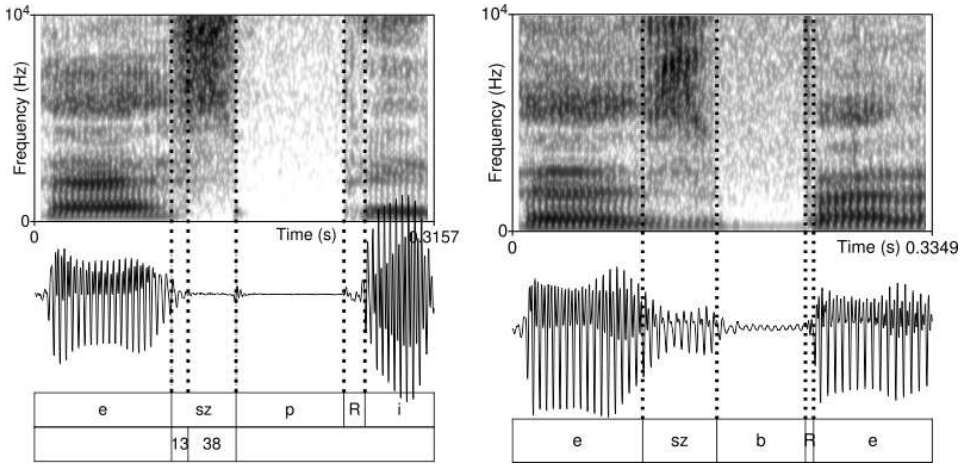
figure 3: Spectrogram and low-pass filtered (0–500 Hz) waveform of (sz)eszes *'alcoholic (drink)'. The numbers at the bottom indicate the length (in ms) of the voiced+voiceless portion of the constriction*



4 Automatic measurement of the acoustic correlates of voicing

In this section I will enumerate the correlates of voicing contrast usually cited in the literature, and show how they can be measured in Praat. I will also compare the results of Praat's measurements with those of the manual/visual measurements in the previous section. Most of these measurements can be carried out automatically with the help of scripts in Praat,

figure 4: Spectrogram and low-pass filtered (0–500 Hz) waveform of (sz)esz pi-(rosra) *'alcohol red-*SUBLAT*' (left) and* (sz)esz be(lefolyt) *'alcohol flowed-*ILLAT*' (right). The numbers at the bottom indicate the length (in ms) of the voiced+voiceless portion of the constriction, if the closure was voiced throughout, no number is given. 'R' stands for the release noise*



and so it is for this reason that we can call them 'automatic' measurements, as opposed to the manual/visual inspection of the spectrograms and waveforms, and reading off data from them in Praat.

4.1 Pulse-based measurements

Perhaps the most well-known method to measure phonetic voicing in Praat is to use its 'Voice Report' (henceforth VR), which measures voicing based on the glottal pulses that it finds in the speech signal. There are many factors that Praat's VR lists but the one that is meant to measure the ratio of unvoiced portions is what is called 'Fraction of locally unvoiced frames'. In this paper, the standard settings were used among the Pitch settings (in the 'advanced' pitch settings, too), except that the 'analysis method' was set to 'cross-correlation', which is recommended by Praat as the optimal method for voice analysis. Also, in the 'Advanced pulses settings', the standard values were set. The measurements were made the following way: all the sound file was read in and displayed in the sound editor window. The sound files contained the focus sounds and their immediate environments as well as additional portions as shown by figures 1–4. With the whole sound file displayed, the /t/ and /s/ domains were selected, and then the VR was called. The results are shown in table 2.

table 2: Results of Praat's VR for "Fraction of locally unvoiced frames" (%) for all six tokens. The results of the manual measurements are also repeated for comparison

	netet	netpro	netbe	szeszes	szeszpi	szeszbe
VR:	74	87	10	82	80	0
manual:	62	75	0	78	75	0

Compared with the manual measurements, the VR results are slightly different. In the case of *netet,* VR judges /t/ to be more voiceless than the manual measurement (VR: 74% vs manual: 62%); similarly, /t/ in *netpro* is reported to be 87% voiceless by VR, whereas it was 75% voiceless when measured manually. The results for *szeszes* and *szeszpi* are very similar as well in both methods, indicating that the focus segments are mostly voiceless. In the 'voicing environments' (before /b/) the results were similar again, with the same results for *szeszbe*: both methods found /s/ to be fully voiced.

There are two problems, however, with the VR method of Praat. One is mentioned in, for example, Gradoville (2011). Using the default settings, Praat's VR function may be "fooled" if the speech signal contains a periodic sound that is not a result of glottal vibration. This can often happen in the case of fricatives. "Phantom" pulses like these can be eliminated if the maximum pitch is set to around 250 Hz.

The second problem concerning Praat's VR is, however, more serious, and greatly affects the validity of the results VR reports and the reliability of the voicing measurement method of Praat. The VR is sensitive to the length of the sound signal that Praat reads in and displays in the sound editor. VR often reports different results if a section is selected for measurement while, say, the whole sound file is read in as opposed to when exactly the *same* section is selected while a different length of the file is read in by Praat. For example, in the case of *netet,* the VR value for unvoiced frames is 74% when the whole sound file was read in and displayed (383 ms long). But, if we cut out or display only the V-/t/-V portion of the signal (218 ms), VR reports that the fraction of unvoiced frames for the *same* /t/ closure section is now 68%! If we further decrease the length of the analysis section displayed (so that only half of the flanking vowels are visible, total length = 157 ms), the value moves up to 74%. If only the /t/ section is visible, the value reported by VR is 65%, which is the closest to the value that was measured manually. Depending on the length of the analysis domain, the values by VR vary slightly or greatly. The values varied in this fashion for all six tokens discussed in this paper.

Praat's manual mentions this potential issue:

> Most of Praat's voice analysis methods start from the glottal pulses that are visible in the SoundEditor window as blue vertical lines through the waveform. [...] If your sound is long, you may have to zoom in in order to see the separate pulses. You may notice that for some sounds, the time location of the pulses can vary when you zoom or scroll. This is because only the visible part of the sound is used for the analysis. The measurement results will also vary slightly when you zoom or scroll.

In my experience, the variation can sometimes be large and not 'slight', and thus seriously question the validity of the results. This issue is linked to the underlying algorithm that is based on frames, and the number of those frames, as discussed by Boersma (1993 : 104), on which Praat's voicing measurements are based:

> Because our method is a short-term analysis method, the analysis is performed for a number of small segments (frames) that are taken from the signal in steps given by the TimeStep parameter (default is 0.01 seconds). For every frame, we look for at most MaximumNumberOfCandidatesPerFrame (default is 4) lag-height pairs that are good candidates for the periodicity of this frame. This number includes the unvoiced candidate, which is always present.

Based on the limited data of this paper, the values remain close to those measured using the whole sound file when the visible section contained *exactly* the domain of /t/ and /s/ (see table 3). It was especially true for /t/; for /s/, the values did not change much. It thus seems advisable to cut these analysis domains and use *only these* for the VR measurements. In order to gain the most valid and reliable results, it is, however, recommended that one resorts to the manual/visual measurement method of finding the ratio of voiceless–voiced portions in a given section of the sound signal, but this, unfortunately, may render the processing of the data set time-consuming.

4.2 Harmonicity

The harmonics-to-noise ratio (HNR) can be used to compare the relation of periodicity and noise in a sound signal, and so it can be a measure for both the degree of voicing and "noisiness", ie how periodic (as opposed to aperiodic) a sound is (see, eg Hamann & Sennema 2005, Bárkányi & Kiss

table 3: Results of Praat's VR for "Fraction of locally unvoiced frames" (%) for all six tokens, when the whole sound file is visible (VR_0) vs when only the analysis section is visible (VR_1). The results of the manual measurements are also repeated for comparison

	netet	netpro	netbe	szeszes	szeszpi	szeszbe
VR_0:	74	87	10	82	80	0
VR_1:	65	77	9	82	81	0
manual:	62	75	0	78	75	0

2009, 2010, Gordeeva & Scobbie 2010, Gradoville 2011). An HNR of 0 dB means that there is equal energy in the periodic and noisy part, while an HNR approximating to 20 dB indicates that almost 100% of the energy of the signal is in the periodic part, hence the sound is a (sonorant) voiced sound (cf the Praat manual, for the technical details, see Boersma 1993). Based on its definition, HNR can only be used reliably as a measure of voicing in the case of fricatives (and other sounds that contain turbulence) and voiced sounds, but not in the acoustic analysis of stops that contain neither periodicity nor noise (ie unreleased voiceless stops).

Praat's VR also lists the HNR, but just like the "unvoiced frames" measure, this value is sensitive to the length of the file read in by Praat. Also, it only lists the HNR of what it judges to be "voiced parts." Thus, the method to be followed is to extract the focus domain as a separate sound object (in our case: the constriction portion of /s/), and create what is called a "harmonicity object," and measure HNR on that object only, using the cross-correlational method (in Praat: Periodicity, To Harmonicity (cc), the standard settings: Time step = 0.01 s, Minimum pitch = 75 Hz, Silence threshold = 0.1, Period per window = 1.0). Calling the Info window, various HNR values are given, in this paper I use the HNR median value. The HNR medians for /s/ are summed up in table 4.

table 4: HNR medians of /s/ in dB (top row). The results of the manual measurements of the unvoiced sections (in %) are also repeated for comparison (bottom row)

szeszes	szeszpi	szeszbe
0.12	−1.11	8.54
78	75	0

The HNR median values in table 4 seem to correspond to the manual voicing measurements: the higher HNR median is indicative of a periodic and somewhat noisy sound (a voiced fricative).

4.3 Centre of gravity

The centre of gravity (CoG), or spectral mean/centroid, corresponds to the average of frequencies over the entire frequency domain weighted by the amplitude (the power spectrum). CoG is then interpreted as the frequency that divides the spectrum into two halves such that the amount of energy in the higher frequencies (the "top" half) is equal to the amount of energy in the lower frequencies (the "bottom" half). If, for example, most energy can be found at higher frequencies, the CoG will have a relatively large value. The most frequent use of CoG is to quantify the *place-of-articulation* differences between fricatives and released stops (Jassem 1979, Forrest et al. 1988, Jongman et al. 2000, Gordon et al. 2002, Ladefoged 2003, Johnson 2003, Machač & Skarnitzl 2005, Boersma & Hamann 2006, 2008).

CoG can also be used to quantify the *manner* of articulation of fricatives, namely whether the spectrum of a fricative contains energy at higher frequencies (relatively high CoG) or at lower frequencies (relatively low CoG). In the former case, the fricative can be considered noisy; in the latter case, the fricative can be characterized with formant structure and the presence of voicing (both skew the energy distribution of the spectrum towards the lower frequencies). This interpretation of CoG was made use of in the differentation between the various labiodental fricatives: voiceless and noisy fricative [f], voiced and noisy fricative [v], and voiced ("narrow") approximant [ʋ] in German and Dutch (Hamann & Sennema 2005), as well as Hungarian and Slovak (Kiss & Bárkányi 2006, Kiss 2007, Bárkányi & Kiss 2009).

Assuming that the place of articulation of the sound to investigate does not change considerably, CoG is expected to be pulled towards the low frequencies in a sound whose production involves excitation by vocal fold vibration (and vowel-like formant structure), in other words, it seems logical that CoG can be used to quantify the differences between voiced and voiceless stops whose place of articulation is (more or less) the same (cf eg Gradoville 2011).

The measurement methods for CoG reported in the literature vary widely, and hence the values reported also vary a lot.[2] In this paper, I assume the standard setting of Praat for CoG, namely, that the spectral mean is computed by weighing the frequencies in the spectrum by their power densities. This is the method used in Forrest et al. (1988), Jongman et al. (2000), Żygis & Hamann (2003), Padgett & Żygis (2003) as well as

[2] Very often, the exact, detailed methods of measuring CoG are unfortunately missing in the descriptions, as in, eg Gradoville (2011).

Boersma & Hamann (2008).[3] In Gradoville (2011), this method is referred to as "COG2" ("power weighing COG"). For the CoG measurements in this paper, the stop closure and the fricative constriction were cut out based on the segment boundaries in Praat's TextGrid (see figures 1–4). I added 20+20 ms to both sides of the analysis domain because of the width of the analysis window we are using for the spectrum analysis (20 ms, see below)—this way the full domain of the sound was preserved for analysis. The recordings were resampled at 22 050 Hz, and low-pass filtered between 0 and 11 000 Hz. An FFT spectral object was created by placing the cursor in the middle of the closure for /t/ and the constriction of /s/, using the following spectrogram settings: window length = 0.02 s (this means that the physical length of the analysis window was 40 ms long) and window shape was Gaussian (all other spectrogram settings were left standard in Praat).[4] To get the CoG, we query the central of gravity, with power = 2.0.

Another spectral moment, the spectral standard deviation (StD), or spectral dispersion, can be used in conjunction with CoG to measure whether the energy is concentrated mainly in a small band around the centre of gravity or spread out over a wide range of frequencies. For this paper, I measured StD on the same spectral object as the CoG, and simply queried Praat to measure it, with power = 2.0. Figure 5 shows the CoG and StD values for our six test tokens.

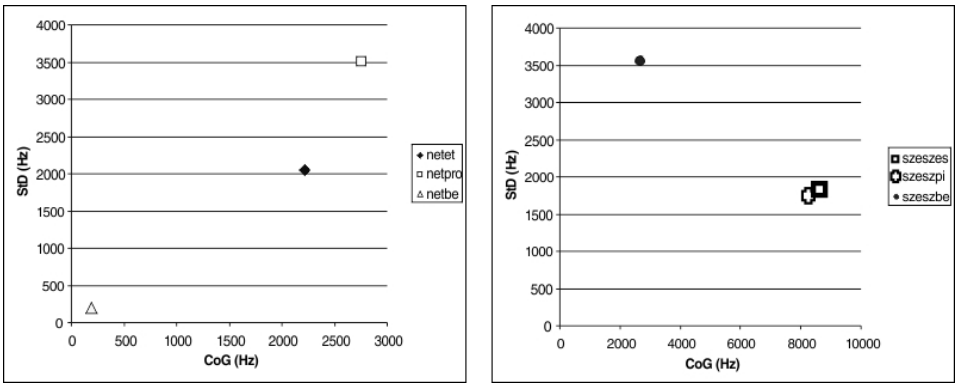
Figure 5 indicates that the voiced tokens *netbe, szeszbe* are separated from the unvoiced tokens. In the case of *netbe,* the CoG is 193 Hz, with a StD of 167 Hz, which means that the energy is concentrated around the low frequencies. In the case of the other two /t/-tokens, the CoG is higher, and the centroid is wider-spread, indicative of an unvoiced, somewhat noisy sound.[5] The CoG values for /t/ thus correspond well with the manual measurements of voicing: /t/ in *netbe* is voiced, while in *netet, netpi...* it is unvoiced. Similar conclusions can be drawn from the values of /s/: its CoG is drawn towards lower values in *szeszbe* (this was manually measured as voiced), with a relatively high dispersion: this sound looks to be

[3] According to Boersma & Hamann (2006, footnote 7), Gordon et al. (2002) and Ladefoged (2003) "apparently used the incorrect method [of measuring CoG...] which weighs the frequencies by their intensity values in dB and is therefore sensitive to arbitrary recording settings."

[4] This is the method employed in Jongman et al. (2000), except that here I only use one analysis window, and not several windows. On the method of using several analysis windows for CoG measurements, see, eg Kiss (2007).

[5] This may well be because of the background noise during the silent closure of the stop.

figure 5: Centre of gravity and standard deviation ("dispersion") for /t/ (left) and /s/ (right) in the three positions



voiced as well as noisy.[6] The other two tokens are very similar with respect to CoG and StD: the values are indicative of a sound whose energy is centred at very high frequencies, and this centroid is relatively wide-spread. We conclude that the CoG/StD values correspond well with the manual measurements of voicing in the case of /s/, too.

4.4 Duration

It has been long observed that there is a correlation between the voicing properties of obstruents and the duration of preceding stressed vowels (or vowel + sonorant sequences), and the duration of closure or constriction of the obstruent (see, among others, House & Fairbanks 1953, Chen 1970, Lehiste 1970, Kluender et al. 1988). More closely, voiceless obstruents as opposed to voiced obstruents are relatively long, and vowels (or vowel + sonorant sequences) before them are relatively short. This has been referred to in the English literature as Pre-Fortis Clipping (Wells 1982, Harris 1994). On the other hand, voiced obstruents are relatively short, while vowel or vowels + sonorants before them are relative long. This is often called Pre-Lenis Lengthening, especially in the American literature (Chomsky & Halle 1968). Jongman (1989) and Kreitman (2008) found that different fricatives seem to have different intrinsic duration. According to the results of Jongman (1989) for instance, English /f/ is longer than any

[6] If we low-pass filter the sound with a cutoff at 3000 Hz for example (thus we get rid of the effect of the high-intensity and high-frequency noise), the CoG and StD of /s/ in *szeszebe* move down radically to 236 Hz and 238 Hz respectively, showing that without the influence of the noise at high frequencies, the sound is voiced.

other fricative. He also found that fricative length varied according to the quality of the neighbouring vowel (he examined CV sequences).

Since speakers typically talk at different rates, the absolute durations of the segments are highly variable, and this is of major concern in acoustic experiments, too. It has been found, however, for English and German for instance (Port & Dalby 1982, Port & Leary 2005) that the ratio of vowel duration to stop closure or fricative constriction remains rather constant in words with the same voicing feature. More closely, the V-to-C duration ratio is generally larger for voiced obstruents than for voiceless obstruents. This ratio is relatively invariant across changes in speaking rate, syllable stress, and segmental context. The durational effects have been given both articulatory and perception-based accounts. Already Chomsky and Halle argue, for instance, that 'the very common lengthening of vowels before voiced obstruents can be explained on the grounds that it requires time to shift from the glottis configuration appropriate for vowels to that appropriate for obstruents' (Chomsky & Halle 1968 : 301; see also Belasco 1953). Stevens et al. (1992) argue, however, that voiced fricatives have shorter frication intervals because they are produced with a smaller glottal abduction gesture, which satisfies the aerodynamic requirements for turbulent noise generation for a relatively short interval in comparison to the large abduction gesture that accompanies voiceless fricatives.

On the other hand, many perception-driven accounts derive the inverse patterning of voiced-voiceless obstruent length and preceding vowel duration as a form of mutual auditory enhancement for the voicing contrast. The idea is that increased vowel duration makes the duration of a following obstruent appear shorter, and conversely that a decrease in vowel duration increases the perceived duration of a following obstruent, and that vowel duration and obstruent duration are therefore integrated into a single percept (Port & Dalby 1982, Port & Leary 2005, Massaro & Cohen 1983, Kluender et al. 1988). This hypothesis has been largely supported by experimental evidence. Thus, listeners pay attention especially to the relative duration of a vowel and the constriction duration of a following obstruent (Javkin 1976, Parker et al. 1986, Kingston & Diehl 1994).

Since this paper focuses on two phonologically voiceless segments /t/ and /s/, and not their contrast with, say, /d/ and /z/ respectively, the durational correlate of voicing will not be further investigated here. It should be noted, however, that based on the discussion above, the expectation is that the vowel-to-consonant durational ratio should not vary significantly because the underlying segments are all voiceless, unless voicing assim-

ilation in *netbe* and *szeszbe* fully neutralizes the contrast of /t/–/d/ and /s/–/z/.[7]

4.5 Intensity

Gradoville proposes that intensity can be used as another correlate of phonetic voicing in the case of fricatives. He warns that a crucial aspect of intensity-based approaches is that "they must be normalized for the recording level and the volume of speech." He suggests two ways for the normalization of intensity: (i) the consonant-to-vowel intensity ratio on both sides of the fricative (when available): the fricative-to-left-vowel intensity ratio (FTL) and the fricative-to-right-vowel intensity ratio (FTR), and (ii) the ratio of low frequency intensity to that of the entire sound (LFT). The logic behind this second normalization approach is that "voicing is only ever going to happen at low frequencies and the frication from the [fricative] is only ever going to happen at higher frequencies. Such a ratio tells us how much of the intensity for the fricative is accounted for by low frequency intensity, which in general will be voicing if the recording is relatively free of extraneous noise" (2011 : 63).

In this paper I measure FTL and the LFT for /s/, following Gradoville's (2011) method: the intensity values were taken in the middle 50 ms of each vowel and consonant. The ratios were taken by subtracting the intensity of the left vowel from that of the fricative. This yielded FTL. LFT was measured by applying a pass Hann band filter on the extracted sound object with the following parameters: from frequency = 0 Hz, to frequency = 900 Hz, smoothing = 100 Hz. The mean intensity was then taken from the unfiltered sound and the filtered sound. The former was subtracted from the latter to yield the LFT. According to Gradoville, "values closer to zero are predicted to be more voiced, whereas values farther from zero are predicted to be more voiceless." Table 5 shows the values for FTL and LFT for /s/.[8]

[7] Results in Bárkányi & G. Kiss (2012) indicate that in intervocalic position, there is no significant difference between /t/–/d/ and /s/–/z/ with respect to the duration of the preceding vowel; however, the duration of the consonants and the vowel-to-consonant duration ratios remained significantly different (the vowels were longer before the underlyingly voiced segments). For the /tp/–/dp/, /sp/–/zp/ and /tb/–/db/, /sb/–/zb/ contrasts, none of the three durational correlates were significantly different, except the duration of the preceding vowel in the case of the /sp/–/zp/ contrast.

[8] Gradoville (2011) does not detail the intensity settings he used in Praat; here I use the standard settings.

table 5: Fricative-to-left-vowel intensity ratio (FTL) and low frequency-to-total intensity (LFT) ratio, both in dB. The results of the manual measurements of the unvoiced sections (in %) are also repeated for comparison (bottom row)

	szeszes	szeszpi	szeszbe
FTL	12.52	14.51	11.46
LFT	−23.43	−16.59	−10.02
manual	78	75	0

This very preliminary result indicates, as hypothesized by Gradoville (2011), that the voiced token has a value closest to 0 dB. Needless to say, for a thorough testing of this voicing parameter, more tokens and statistical analyses are needed.

4.6 Zero-crossing rate

Zero-crossing rate (ZCR) is a measure of the number of times in a given time interval that the amplitude of the speech signals passes through a value of zero (the time-axis), divided by the number of frames. ZCR is frequently used in automatic speech recognition systems to separate the voiced/unvoiced portion of the speech signal (see, among others, Ito & Donaldson 1971, Rowden 1992 : 45–46, Heffernan 2007, Bachu et al. 2008). Phonetic/laboratory phonological application of ZCR can be found in Bombien (2006) for the acoustic analysis of voiceless sonorants in Icelandic and in Gordeeva & Scobbie (2010) for the analysis of preaspiration in voiceless fricatives in Scottish English. According to Gordeeva & Scobbie (2010), in the case of fricatives, the ZCR tends to be higher in voiceless fricatives than in voiced fricatives, thus lower values of ZCR reflect more modal excitation (voicing).

ZCR is usually counted in 10-ms-long frames per second divided by the number of frames (as in Gordeeva & Scobbie 2010). For example, if we measure a sound which is 10 ms long (ie we have only one 10-ms-long interval), and in this 10-ms-long frame the speech signal crosses the time-axis 78 times, the ZCR will be 7800 crossings per second ("crps") divided by 1, thus 7800 crps.

In Praat, the number of zero-crossings can be calculated by creating a PointProcess object from the Sound object (select the Sound object, then Points, ToPointProcess (zeros)). The channel number is 1 if the recording is mono. For the purposes of this paper, both "Include raisers" and "Include fallers" were selected. Querying "Get number of points" is supposed to

give the total number of zero-crossings. This number should be multiplied by 100 to get the per-second value, and divided by the number of 10-ms frames to measure the ZCR.

Figure 6 shows the waveform of the intervocalic fricative in *szeszes* (on the left). The sound file was resampled at 22050 Hz and low-pass filtered between 0 and 11000 Hz, just like in the case of the CoG measurements. The length of the sound is 88 ms, thus there are 8.8 10-ms-long analysis frames. Praat reports that there are 1065 zero-crossings in this domain, that is, 106500 zero crossings per second. The ZCR is 106500 divided by 8.8, amounting to 12102 crossings per second. The ZCR of /s/ in *szeszbe* (on the right of figure 6) is much lower: 3305 crossings per second.

figure 6: Waveforms of the intervocalic fricative in szeszes *(left) and* szeszbe *(right). Their ZCR is 12 170 and 3305 crossings per second, respectively*

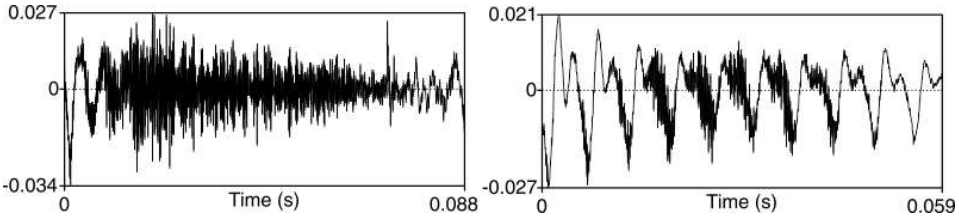


Table 6 displays the ZCR for all six tokens, measured in the closure portion of /t/ and in the constriction portion of /s/.

table 6: Zero-crossing Rate (ZCR) for all six tokens. The results of the manual measurements are also repeated for comparison

	netet	netpro	netbe	szeszes	szeszpi	szeszbe
ZCR:	4031	5235	537	12 102	13 647	3305
manual:	62	75	0	78	75	0

The results go hand-in-hand with the results of the manual measurements, and back the expectation that voiceless fricatives and voiceless occlusions of stops have a higher ZCR than voiced fricatives and voiced stops.

4.7 Low frequency spectral features

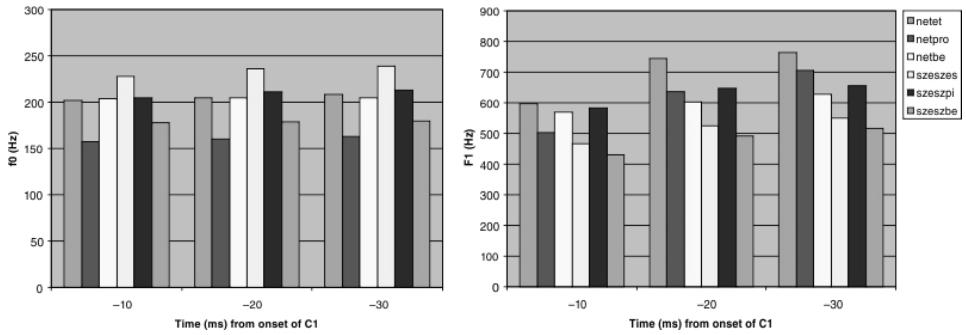
Low frequency spectral features are often cited in the literature to act as acoustic correlates of the underlying voiceless-voiced contrast of stops and fricatives (see Jansen 2004, and the references therein). According to Jansen,

the fundamental frequency f_0 and first formant F1 of a vowel following a voiceless stop and fricative start somewhat higher than the f_0 and F1 of a vowel following a voiced stop and fricative. The low frequency spectral effect is "much stronger following than preceding stops, and it decays over time, so that f_0/F1 differences are normally maximal at the time of voicing onset" (2004 : 52). As Kingston & Diehl (1994) show, the presence of low f_0/F1 values do not imply the presence of voicing, only the reverse seems to hold: voiced stops and fricatives are usually accompanied by f_0/F1 lowering. Jansen (2004 : 141) also warns that the articulatory underpinnings of the low frequency spectral effects are unclear, and so the validity and interpretation of f_0/F1 measurements with respect to voicing are questionable.[9]

The f_0/F1 values in the six tokens of this paper were measured the following way. The original recordings were resampled at 11 025 Hz, and low-pass filtered (pass Hann band between 0–5500 Hz). Measurements were taken at three positions in the pre-consonantal vowel /E/: 10 ms, 20 ms, and 30 ms preceding the onset of the closure of the stop and the constriction of the fricative (based on the boundaries of the TextGrids, see figures 1–4). The values of f_0 and F1 were calculated in Praat with the standard settings.

Figure 7 shows the results of the f_0/F1 measurements.

figure 7: f_0 *(left) and F1 (right) of the preceding vowel in the six tokens, measured at −10, −20 and −30 ms from the onset of the consonant*



[9] In contrast, spectral tilt measurements (such as the difference between the first and second harmonics (H1–H2), or between the first harmonics and first formant (H1–F1)) seem to be reliable correlates of various phonation types, as well as the presence vs lack of aspiration; see, eg Hanson & Chuang (1999), Ladefoged (2003), Gordeeva & Scobbie (2010).

Based on this limited data, the low spectral features seem to be consistent with the view that voicing in a consonant is accompanied by a relatively low f_0/F1 only in the case of the /s/: the lowest value among the /s/-tokens can be found in *szeszbe*, in which /s/ was found to be phonetically voiced by the manual measurement. The values for /t/, especially the f_0 values, do not support the correlation between voicing and low spectral features. The values in the token *netbe* (in which /t/ is phonetically voiced) do not seem to be different from *netet* (where /t/ is mostly voiceless). Also, /t/ in *netpro*, where it was found to be largely voiceless by the manual measurement, has actually the lowest f_0 values. Lastly, the values do not seem to be changing much over time as the measurements move farther away from the consonant onset. We need to stress again, however, that for a thorough investigation, the measurements should be carried out on more tokens, from more speakers, accompanied by vigorous statistical analyses, especially considering the fact that f_0/F1 differences in vowels in the vicinity of voiceless vs voiced consonants rarely seem to exceed 30 Hz (Jansen 2004 : 52), therefore small differences may turn out to be significant.

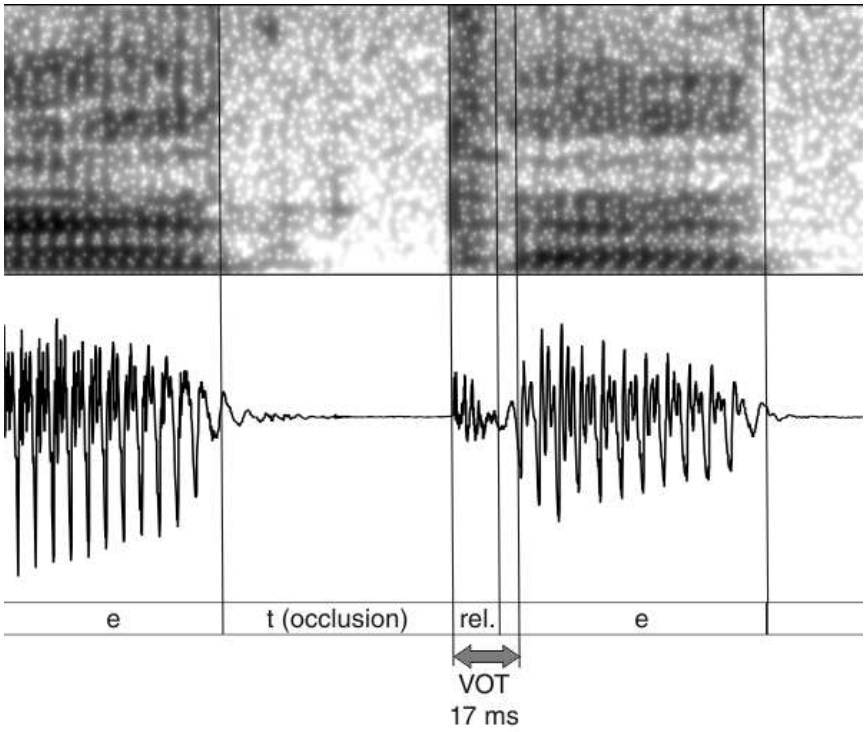
4.8 Voice Onset Time

Voice onset time (VOT), the interval between the release of a stop and the beginning of vocal fold vibration of a following vowel or sonorant consonant, is regarded as one of the most important phonetic correlates of the laryngeal contrast of stops in utterance-/word-initial presonorant (especially prevocalic) position (Lisker & Abramson 1964, Keating 1984, Westbury & Keating 1986, Ladefoged & Maddieson 1996, Jessen 1998, Cho & Ladefoged 1999, Jansen 2004). VOT values allow the analyst to distinguish between three main groups of stops: (i) voiceless aspirated (long lag positive VOT), (ii) voiceless unaspirated (zero or short lag positive VOT), and (iii) voiced unaspirated (negative VOT/prevoiced). "Voicing languages," like Hungarian, contrast negative VOT voiced stops to zero/short lag VOT voiceless stops. According to Jansen (2004 : 46), voicing languages have very similar VOT-targets in medial prevocalic position as in word-initial position, and so it can be used to characterize the difference between voiced vs voiceless stops in this context, too. In preconsonant position, VOT of course cannot be used as a correlate of voicing contrast in the lack of a following vowel or sonorant consonant.

VOT can most reliably be measured manually on the basis of broadband spectrograms and corresponding waveforms: the domain of VOT begins from the appearance of the release burst noise and lasts until the first occurrence of the periodic wave of the following vowel or sonorant

consonant. The analyst also needs to check the presence of vocal fold vibration during the occlusion phase to find possible negative VOT. The only intervocalic stop token among our test words is *netet*, the VOT of the intervocalic /t/ in this word is positive and 17 ms long (see figure 8). According to Keating (1984), the cut-off point between short vs long lag VOT is 35 ms, and so the /t/ in *netet* can be classified as a voiceless stop with short lag VOT.

figure 8: VOT of netet



5 Conclusion

This paper has presented a short overview of the most important acoustic correlates of voiceless and voiced stops and fricatives, and how these correlates can be measured in Praat, using some illustrative examples from Hungarian. The paper also touched upon the assessment of the validity and reliability of these correlates and measurement methods in comparison with manual/visual inspection of waveforms and spectrograms. It has been suggested that Praat's automatic pulse-based measurements (Voice Report) and its harmonics-to-noise ratio measurements can poten-

tially give varied results depending on the sound length read in by the software, and so in this case, the manual/visual measurements may provide more reliable results. The other measurements (especially CoG, duration, intensity, and zero-crossing rate) seem to correlate well with the results of the manual/visual method. It must be stressed that a thorough assessment of the various methods would require more tokens and rigorous statistical analysis, and so the findings of this paper must be treated only as preliminary results.

REFERENCES

Bachu, R. G., S. Kopparthi, B. Adapa and B. D. Barkana. 2008. Separation of voiced and unvoiced using zero crossing rate and energy of the speech signal. Ms, Electrical Engineering Department, School of Engineering, University of Bridgeport.

Bárkányi, Zsuzsanna and Zoltán G. Kiss. 2012. On the border of phonetics and phonology: Sonorant voicing in Hungarian and Slovak. Paper presented at the 20th Manchester Phonology Meeting (mfm20), 24-26 May 2012.

Bárkányi, Zsuzsanna and Zoltán Kiss. 2009. Hungarian /v/: Is it voiced? In: Marcel den Dikken and Robert M. Vago (eds.), *Approaches to Hungarian 11: Papers from the New York Conference.* Amsterdam & Philadelphia: John Benjamins. 1–28.

Bárkányi, Zsuzsanna and Zoltán Kiss. 2010. A phonetic approach to the phonology of *v*: A case study from Hungarian and Slovak. In: Fuchs et al. 2010 : 103–142.

Belasco, Simon. 1953. The influence of articulation of consonants on vowel duration. *Journal of the Acoustical Society of America* 25 : 1015–1016.

Boersma, Paul. 1993. Accurate short-term analysis of the fundamental frequency and the harmonics-to-noise ratio of a sampled sound. *Proceedings of the Institute of Phonetic Sciences (University of Amsterdam)* 17 : 97–110.

Boersma, Paul and Silke Hamann. 2006. Sibilant inventories in bidirectional phonology and phonetics. Paper presented at the Third Old World Conference in Phonology (OCP3), 17–19 January 2006, Budapest.

Boersma, Paul and Silke Hamann. 2008. The evolution of auditory dispersion in bidirectional constraint grammars. *Phonology* 25 : 217–270.

Boersma, Paul and David Weenink. 2012. Praat: Doing phonetics by computer. (Version 5.3.23) [Computer program].

Bombien, Lasse. 2006. Voicing alternations in Icelandic—A photoglottographic and acoustic investigation. *Arbeitsberichte des Instituts für Phonetic der Universatät Kiel* 37 : 63–82.

Chen, Matthew. 1970. Vowel length variation as a function of the voicing of the consonant environment. *Phonetica* 22 : 129–159.

Cho, Taehong and Peter Ladefoged. 1999. Variations and universals in VOT: Evidence from 18 endangered languages. *Journal of Phonetics* 27 : 207–222.

Chomsky, Noam and Morris Halle. 1968. *The sound pattern of English.* New York: Harper & Row.

Forrest, Karen, Gary Weismer, Paul Milenkovic, and Ronald N. Dougall. 1988. Statistical analysis of word-initial voiceless obstruents: Preliminary data. *Journal of the Acoustical Society of America* 84 : 115–123.

Fuchs, Susanne, Martine Toda and Marzena Żygis (eds.). 2010. *Turbulent Sounds. An Interdisciplinary guide.* Berlin & New York: De Gruyter Mouton.

Gordeeva, Olga B. and James M. Scobbie. 2010. Preaspiration as a correlate of word-final voice in Scottish English fricatives. In: Fuchs et al. 2010 : 167–207.

Gordon, Matthew, Paul Barthmaier, and Kathy Sands. 2002. A cross-linguistic acoustic study of voiceless fricatives. *Journal of the International Phonetic Association* 32 : 141–174.

Gradoville, Michael Stephen. 2011. Validity in measurements of fricative voicing: Evidence from Argentine Spanish. In: Scott M. Alvord (ed.), *Selected Proceedings of the 5th Conference on Laboratory Approaches to Romance Phonology.* Somerville, MA: Cascadilla Proceedings Project. 59–74.

Hamann, Silke and Anke Sennema. 2005. Acoustic differences between German and Dutch labiodentals. *ZAS Papers in Linguistics* 42 : 33–41.

Hanson, Helen M. and Erika S. Chuang. 1999. Glottal characteristics of male speakers: Acoustic correlates and comparison with female data. *Journal of the Acoustical Society of America* 106 : 1064–1077.

Harris, John. 1994. *English Sound Structure.* Oxford & Cambridge, MA: Blackwell.

Heffernan, Kevin Michael. 2007. Phonetic distinctiveness as a sociolinguistic variable. Doctoral dissertation, University of Toronto.

House, A. and G. Fairbanks. 1953. The influence of consonantal environment upon the secondary acoustical characteristics of vowels. *Journal of the Acoustical Society of America* 25 : 105–113.

Ito, M. and R. Donaldson. 1971. Zero-crossing measurements for analysis and recognition of sounds. *IEEE Transactions on Audio and Electroacoustics* 19 : 235–242.

Jansen, Wouter. 2004. Laryngeal contrast and phonetic voicing: A laboratory phonology approach to English, Hungarian, and Dutch. Doctoral dissertation, Rijksuniversiteit Groningen.

Jassem, Wiktor. 1979. Classification of fricative spectra using statistical discriminant functions. In: Björn Lindblom and Sven Öhman (eds.), *Frontiers of Speech Communication Research.* New York: Academic Press. 189–206.

Javkin, H. 1976. The perceptual basis of vowel duration differences associated with the voiced/voiceless distinction. *Report of the Phonology Laboratory, UC Berkeley* 1 : 78–92.

Jessen, Michael. 1998. *Phonetics and Phonology of Tense and Lax Obstruents in German.* Amsterdam & Philadelphia: John Benjamins.

Johnson, Keith. 2003. *Acoustic and Auditory Phonetics (Second Edition).* Malden, MA & Oxford: Blackwell.

Jongman, Allard. 1989. Duration of frication noise required for identification of English fricatives. *Journal of the Acoustical Society of America* 85 : 1718–1725.

Jongman, Allard, Ratree Wayland, and Serena Wong. 2000. Acoustic characteristics of English fricatives. *Journal of the Acoustical Society of America* 108 : 1252–1263.

Keating, Patricia A. 1984. Phonetic and phonological representation of stop consonant voicing. *Language* 60 : 286–319.

Kingston, John and Randy L. Diehl. 1994. Phonetic knowledge. *Language* 70 : 419–454.

Kiss, Zoltán. 2007. The phonetics-phonology interface: Allophony, assimilation and phonotactics. Doctoral dissertation, Eötvös Loránd University (ELTE), Budapest.

Kiss, Zoltán and Zsuzsanna Bárkányi. 2006. A phonetically-based approach to the phonology of /v/ in Hungarian. *Acta Linguistica Hungarica* 53 : 175–226.

Kluender, Keith R., Randy L. Diehl and Beverly A. Wright. 1988. Vowel length differences before voiced and voiceless consonants: An auditory explanation. *Journal of Phonetics* 16 : 153–169.

Kreitman, Rina. 2008. The phonetics and phonology of onset lusters: The case of Modern Hebrew. Doctoral dissertation, Cornell University.

Ladefoged, Peter. 2003. *Phonetic Data Analysis: An Introduction to Fieldwork and Instrumental Techniques.* Malden, MA & Oxford: Blackwell.

Ladefoged, Peter and Ian Maddieson. 1996. *The Sounds of the World's Languages.* Cambridge MA & Oxford: Blackwell.

Lehiste, Ilse. 1970. *Suprasegmentals.* Cambridge, MA: The MIT Press.

Lisker, Leigh and Arthur Abramson. 1964. A cross-language study of voicing in initial stops: Acoustical measurements. *Word* 20 : 384–422.

Machač, Pavel and Pavel Skarnitzl. 2005. Spectral moments of Czech plosives. Paper presented at the Conference on Turbulences, 13–14 October 2005, Berlin.

Massaro, D. and M. Cohen. 1983. Consonant/vowel ratio: An improbable cue in speech perception. *Perception and Psychophysics* 33 : 502–505.

Padgett, Jaye and Marzena Żygis. 2003. The evolution of sibilants in Polish and Russian. *ZAS Working Papers in Linguistics* 32 : 155–174.

Parker, E., Randy L. Diehl and Keith R. Kluender. 1986. Trading relations in speech and non-speech. *Perception and Psychophysics* 39 : 129–142.

Port, Robert F. and Jonathan Dalby. 1982. C/V ratio as a cue for voicing in English. *Perception and Psychophysics* 2 : 141–152.

Port, Robert F. and Adam P. Leary. 2005. Against formal phonology. *Language* 81 : 927–964.

Rowden, Chris. 1992. Analysis. In: Chris Rowden (ed.), *Speech Processing (The Essex Series in Telecommunication and Information Systems).* Maidenhead: McGraw-Hill. 35–72.

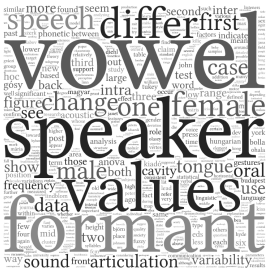
Stevens, Kenneth N., Sheila Blumstein, Laura Glicksman, Martha Burton and Kathleen Kurowski. 1992. Acoustic and perceptual characteristics of voicing in fricatives and fricative clusters. *Journal of the Acoustical Society of America* 91 : 2979–3000.

Wells, John Christopher. 1982. *Accents of English 1–3.* Cambridge: Cambridge University Press.

Westbury, John R. and Patricia A. Keating. 1986. On the naturalness of stop consonant voicing. *Journal of Linguistics* 22 : 145–166.

Żygis, Marzena and Silke Hamann. 2003. Perceptual and acoustic cues of Polish coronal fricatives. In: Maria-Josep Solé, Daniel Recasens and Joachim Romero (eds.), *Proceedings of the 15th International Congress of Phonetic Sciences (Barcelona, 3–9 August 2003).* Barcelona: Causal Productions. 395–398.

Zoltán G. Kiss
gkiss.zoltan@gmail.com
Eötvös Loránd University,
Budapest



Inter-speaker and intra-speaker variability indicating a synchronous speech sound change

Mária Gósy

Introduction

Analysis of fine acoustic-phonetic details of speech has confirmed the variability of speech production across various speakers and within the same speaker on various occasions. Speaker-characteristic differences are supposed to be rooted in long-term voice features based on anatomical characteristics, and in short-term voice features based on the individual articulatory gestures of speaker (Hollien 1990, Johnson 1997, Mooshammer et al. 2008). Speech sound articulation changes in time, both in one's life and across generations (Gósy 1999). The fact that speakers articulate speech sounds or words differently, depending on dialect, phonetic context, prosody, speech style, speaking tempo, gender, hearing acuity, sociolinguistic factors, emotions or even on smoking habits, was demonstrated and discussed during the past decades (eg Heđever et al. 1999, Pierrehumbert 2001, Shiller et al. 2002, Gelfer & Mikos 2005, Recasens & Espinosa 2006, Lindblom et al. 2009, Brunner et al. 2011, Varga 2012). Such variability seems to be crucial in automatic speech recognition and in forensic speaker identification (eg McDougall 2006, Kahn et al. 2011).

Decades ago, Lindblom emphasized that physiological and biomechanical factors have a decisive role in the motor control of articulation (1983). According to his theory, speech output varies along a hyper- and hypospeech continuum. In addition to all these factors, many others might play an important role in the variability of speech production, such as learning or social environmental factors (Perkell et al. 1997). Both inter-speaker and intra-speaker variability is an important topic in phonetics,

both in speech production and speech perception (eg Johnson 1997, Dankovičová & Nolan 1995, Mooshammer et al. 2008).

The pronunciation of speech sounds in spontaneous speech and their perception seems to be paradoxical when we consider both inter- and intra-speaker variability. Speakers always try to approach an assumed target speech sound, but they are influenced by so many factors that they may or may not reach the intended target. In everyday communication listeners constantly map the acoustic-phonetic patterns of all actually produced speech sounds to the supposed targets, an exercise that requires a flexible, modifiable "neural spectrogram" stored in the brain (see the results of testing topographical mapping of vowels on the cortical surface: Obleser et al. 2003).

Ohala pointed out that pronunciation variations are responsible for sound change (1993, 2012) and claims that instrumental phonetic studies shed light on the large amount of variations existing in speech sound articulation. His assumption is that speech sound changes are initiated from the listeners because they might perceive some speech sounds erroneously and so they interpret the speaker's intended articulation gesture differently from his/her intended one. In the seventies, historical sound changes were explained by the speakers' effort to attain articulation economy (eg Benkő 1988, Lindblom 1990, Ohala 2012). Wardhaugh's view is that the two most important factors in linguistic change are the existing variations and the pressure of society as well as their interrelations (1995). Phonetic changes are assumed to occur in words rather than in speech segments (see Pierrehumbert 2001, Bybee 2008). Speech sound changes seem to be gradual in time; however, their rapidity may be different based on various factors influencing them in a certain era (eg Kiss & Pusztai 2005). It is difficult – if not impossible – to define the actual stage of a synchronous change on a time scale. However, we can characterize certain parameters of a speech sound in order to compare them to those measured in the past and in this way it becomes possible to evaluate the extent and direction of change. This requires some reliable parameters from the past that can be compared with the same parameters as they appear at present (see Pettigrew 1990).

The Hungarian speech sound inventory contains a vowel in whose two articulation gestures seem to be undergoing a change at the present time. Traditionally, phoneticians used to characterize the vowel *á*[1] as a back, unrounded, downmost (lowest), long vowel (eg Vértes O. 1982, Bolla

[1] We will use the letter symbol for identification of the vowel *á* in this paper, since some of its phonetic features seem to be uncertain, and so it was not obvious at the beginning of this study which of the IPA-symbols would be appropriate to use.

1995, Kassai 1998, Gósy 2004). In addition, some authors, from Wolfgang von Kempelen (1989 [1791]) on, have claimed that the vowel *á* is not articulated as back in the oral cavity as other Hungarian back vowels are (eg Bolla 1995, Kovács 2004, Gósy 2004, Gráczi & Horváth 2010, Beke & Gráczi 2010). Instrumental measurements in the recent past provide some support for the claim that in articulating this vowel the tongue occupies a more front position. If so, it must also be asked whether the parameters of this vowel show large individual differences indicating uncertainty in its articulation, which might lead to changes in articulatory gestures.

Our research questions are (i) whether the inter-speaker and intra-speaker differences in the pronunciation of the *á* vowel are really so large as to support the claim that the articulatory gestures are changing, and (ii) whether the inter-speaker differences exceed intra-speaker differences in the articulation of this vowel. If we can confirm that acoustic variability occurring both among different speakers and within the same speaker in the articulation of the *á,* this could be regarded as the beginning of a speech sound change. Our hypothesis is that there is a synchronous change taking place in the articulation of the vowel *á,* affecting the horizontal position of the tongue in the oral cavity. We suppose that there will be at least three groups of vowels (both among females and males) indicating that there is a tendency away from traditional back articulation towards front articulation. If we can categorize the measured data accordingly, we may prove the existence of a synchronous change in the articulation gestures of the vowel *á.*

Subjects, method, material

Spontaneous speech samples were used from the (Hungarian) BEA Speech database (Gósy 2012). Subjects spoke about their work, hobbies and told their opinions about some current issues (the educational system, taxes, mobile phones and children, smoking habits, new driving rules in the country and so on). The duration of the recorded speech samples varied across speakers depending on the required number of *á* vowels we could use in the analysis (the mean duration per speaker was 26 minutes). 20 to 40 vowels were analyzed in the narratives of 14 females and 14 males (ages between 22 and 28), altogether 614 realizations in the females' speech samples and 695 realizations in the males' speech samples.

The first three formants of the vowel *á* were measured in the first and second syllables of the words (both in monosyllables and in polysyllables). The following criteria were taken into consideration when selecting the vowels: (i) the vowel should be perceived without doubt as a Hun-

garian *á* vowel like in the word *lát* '(s)he sees', which means that other vowel quality realizations, for example the neutral vowels, were excluded from the analysis, and (ii) the vowels should occur both in content and in function words (without any further selection). We did not intend to (and could not) control either the syllable type or the number of syllables in the words. The vowel quality of the *á* vowels was defined by the author and another phonetician (in a few cases of disagreement, the vowels in question were excluded). Examples of words that contained this vowel: *fák* 'trees', *már* 'already', *látogatókkal* 'with visitors', *támad* '(s)he attacks', *bármelyik* 'whichever'; *órákban* 'in hours', *kutyám* 'my dog', *inkább* 'rather', *találkoztunk* 'we met', *egymáshoz* 'to each other'.

Measurements of the formants were carried out manually in the middle of the steady-state phase of the vowel considering the visual information of both the spectrograms and oscillograms as well as the repeated audition of the vowel in question (using Praat software: Boersma & Weenink 2011). In some cases we also used the automatic formant curves generated by the software. In addition, the energy spectra of the vowels were also used (FFT-analysis, Fast Fourier Transformation) in all vowels to support the values of the three formants.

Statistical analysis was carried out by SPSS 17 software (one-way ANOVA, Tukey post-hoc tests). Fuzzy clustering technique was used for automatic classification.

Results

Vowels are characterized acoustically by their formant structures. Traditionally, the first three formants are considered out of which the first two formants (F1 and F2) alone specify the vowel quality in many languages while third formants seem to be more closely linked to the speakers' individual characteristics (eg Ladefoged 1975, Hollien 1990, Künzel 1995). Formant measurements of the Hungarian vowels go back to the sixties of the past century (Tarnóczy 1965, Magdics 1965). During the past decades several values were defined for the first three formants of the vowels, using mainly read speech (Molnár 1970, Vértes O. 1982, Olaszy 1985, Bolla 1995, etc). These studies provided means and sometimes ranges on the formant values of the *á* representing frequently only a few (sometimes one or two) speakers' data.

The first formant of the vowel indicates the tongue position vertically in the oral cavity while the second formant indicates the tongue position horizontally in the oral cavity. The higher value of F1 shows lower tongue position while the higher value of F2 shows that the tongue is placed some-

where in the front of the oral cavity (eg Fant 1973, Slifka 2005). The mean values of the first formant of *á* were about 950 Hz in the case of females and about 780 Hz in the case of males while the second formants ranged about 1500 Hz in the case of female speakers and about 1400 Hz in the case of male speakers in the papers published in the last third of the past century (Magdics 1965, Tarnóczy 1965, Molnár 1970, Vértes O. 1982, Olaszy 1985). These formant values indicate that about half a century ago Hungarian *á* was a vowel articulated at the back of the oral cavity both in the case of females and males and that its tongue position was somewhat lower than that experienced with Hungarian low vowels.

For our data, statistical analysis was carried out to learn whether there is any difference in the formant values of the female speakers between the monosyllables and polysyllables on the one hand, and between the first and second syllables of the polysyllabic words, on the other. No significant differences were found for the first two formants. Although the third formant values differed significantly depending on their occurrence in the first or the second syllable (one-way ANOVA: $F(1, 613) = 36{,}805$; $p = 0{,}01$); however, the mean difference is only 111 Hz (the difference of standard deviation is 18 Hz) which is irrelevant for the speakers' sound identification. Therefore, all values were used in analyzing the inter-speaker and intra-speaker variability for the vowel *á* (table 1). Looking at the range of the values, we can postulate large individual differences for all formants. The first formant values around 500 Hz mark a vowel where the tongue height is somewhat lower than in the case of the Hungarian mid-vowels like [o] while higher values indicate that the vowels' tongue position is similar to those vowels that are traditionally low vowels. The F1-values around 900 Hz, however, refer to a vowel where the tongue height is very low, much lower than in the case of the traditionally low Hungarian vowels. The values of F2 around 1600 Hz represent vowels where the tongue is located in the middle of the oral cavity. On the contrary, values around and above 2000 Hz refer unquestionably to a front vowel.

table 1: The first three formant values of the vowel á *in females' articulation*

Formants	Female speakers' values (Hz)			
	mean	std. dev.*	min.	max.
F1	766	81	500	998
F2	1841	96	1600	2200
F3	2788	232	2020	3849

* standard deviation

Similarly to females' data, statistical analysis was carried out concerning the possible effects of monosyllabic and polysyllabic words, as well as the first and the second syllable position of the polysyllabic words in the case of male speakers. Again, no significant differences were found for the first two formants. The third formant values showed significant differences depending on the first and second syllables (one-way ANOVA: $F(1, 694) = 28{,}036$; $p = 0{,}01$); however, the differences here were even lower than those in females (mean difference was 74 Hz while the difference of standard deviation is 15 Hz). Therefore, again all values were used in further analyzing the inter-speaker and intra-speaker variability for the *á* vowel (table 2).

table 2: The first three formant values of the vowel á *in males' articulation*

Formants	Male speakers' values (Hz)			
	mean	std. dev.*	min.	max.
F1	687	68	488	973
F2	1481	114	1180	1773 **(1936)
F3	2384	183	1406	2958

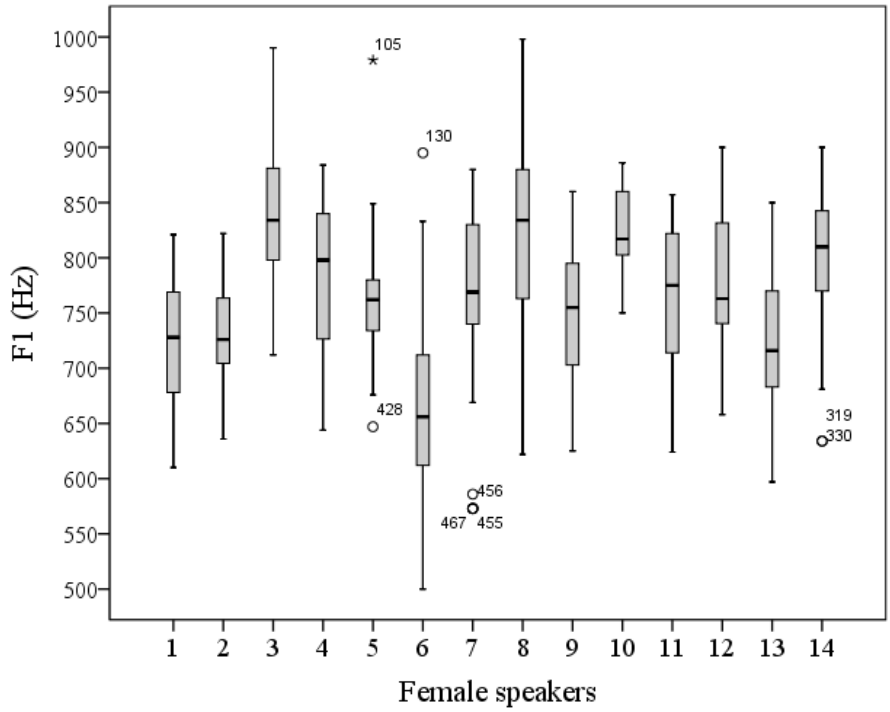
* standard deviation

** the value in brackets is an outlier

The male speakers articulated their *á* vowels similarly to female speakers considering the tongue height parameter. Their first formants range widely indicating that the tongue height varies from almost mid-tongue position to a very low position. As opposed to the female speakers' second formant values, males' F2-s are much lower than those of the females'. The values, around 1200 Hz, indicate a back vowel in terms of the horizontal position of the tongue in the oral cavity while those between 1500 Hz and 1700 Hz are characteristic of a central vowel where the tongue is positioned in the middle of the oral cavity. With the exception of the neutral vowel, which is not a member of the phoneme inventory of the language, this is not a usual articulation gesture in Hungarian.

Figure 1 shows the female speakers' data for the first formants. The different F1-values indicate the different heights of the tongue. With some speakers, eg 1, 2, 6 and 13, the first formants are lower than with other speakers, eg 3, 4, 8, 10, 14, indicating a lower tongue height with the former and higher tongue height with the latter. Statistical analysis confirmed significant differences among speakers (one-way ANOVA: $F(13{,}651) = 373{,}521$;

figure 1: Female speakers' first formant values of the vowel á



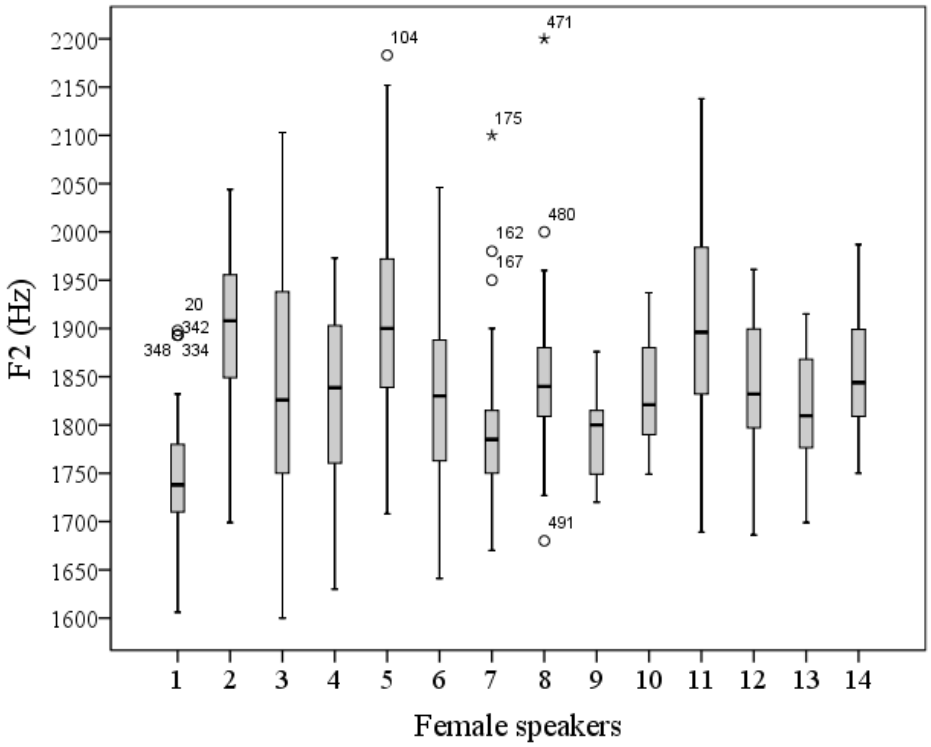
$p = 0.001$). The detailed data of the Tukey post-hoc tests show that our female speakers differ from each other in various ways.

Speakers 1, 3, 6, 8, 10 and 13 differ significantly from 7 or more other speakers, while speakers 2, 4, 5, 7, 9, 11, 12 and 14 differ from 4 or more other speakers. There are speakers whose first formant values do not differ significantly from a group of other speakers, like those of speaker 1 from 5, 7 and 9, or those of speaker 10 from those of 3, 4, 8 or 14. The boxplots of the figure 1 demonstrate also the large intra-speaker variability. There are speakers that seem to be more consistent in their articulation gestures than others (eg speakers 2, 5 or 10 as opposed to speakers 4, 8 or 11). For example, the range of F1 in speaker 2 is about 60 Hz for most of her *á* vowels, while the same range is about 200 Hz in speaker 8.

The statistical analyses also revealed some significant differences in the second formants of female speakers (one-way ANOVA: $F(13, 651) = 1297{,}202$; $p = 0.001$). The Tukey post-hoc tests showed as many statistically relevant inter-speaker differences for the F2-values as in the case of the F1-values (figure 2). The second formant values shed light on the fact that our

female speakers articulate the vowel *á* as a palatal one – with the exception of three speakers (1, 7 and 9) – where the F2 values appear under 1800 Hz. The majority of the second formants of the three exceptional speakers are lower than 1800 Hz; however, there are only a few vowels whose F2s appear at those frequencies that indicate mid-position of the tongue in the oral cavity.

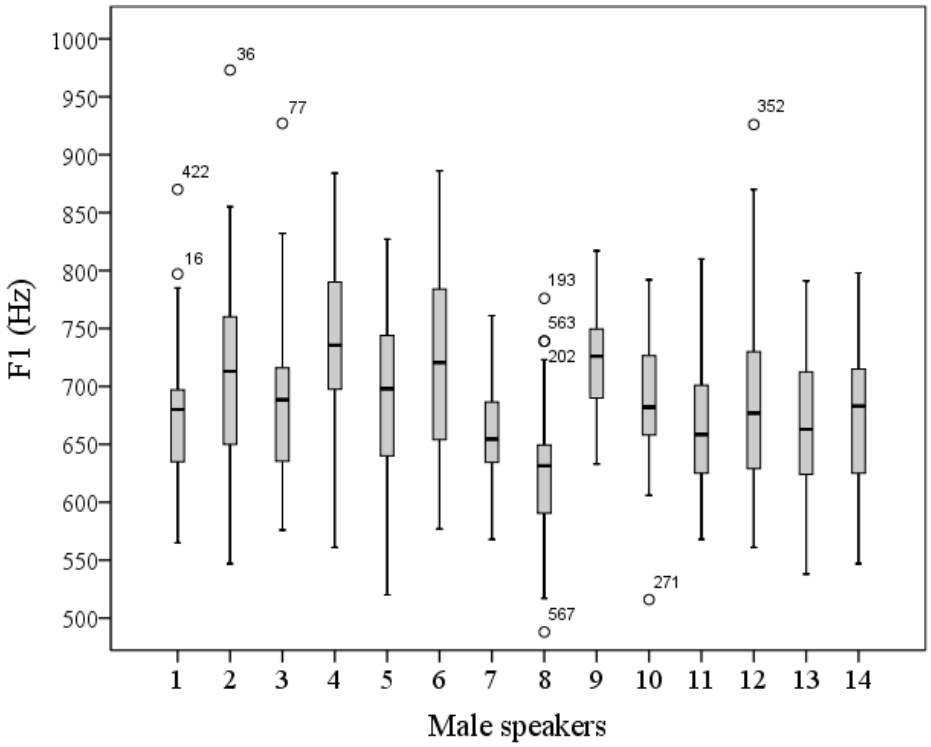
figure 2: Female speakers' second formant values of the vowel á



Detailed analysis of the male speakers' data shows similarities to and differences from the females' data. The first formant values demonstrate significant inter-speaker differences (one-way ANOVA: $F(13, 694) = 9{,}718$; $p = 0.001$). The Post-hoc Tukey tests, however, did not show as large inter-speaker variability as experienced with the females. Some speakers (2, 3, 5, 10 and 12) differ significantly only from one or two other speakers (figure 3).

Four male speakers were found whose first formant values were significantly different from those of six or more other subjects. The first for-

figure 3: Male speakers' first formant values of the vowel á

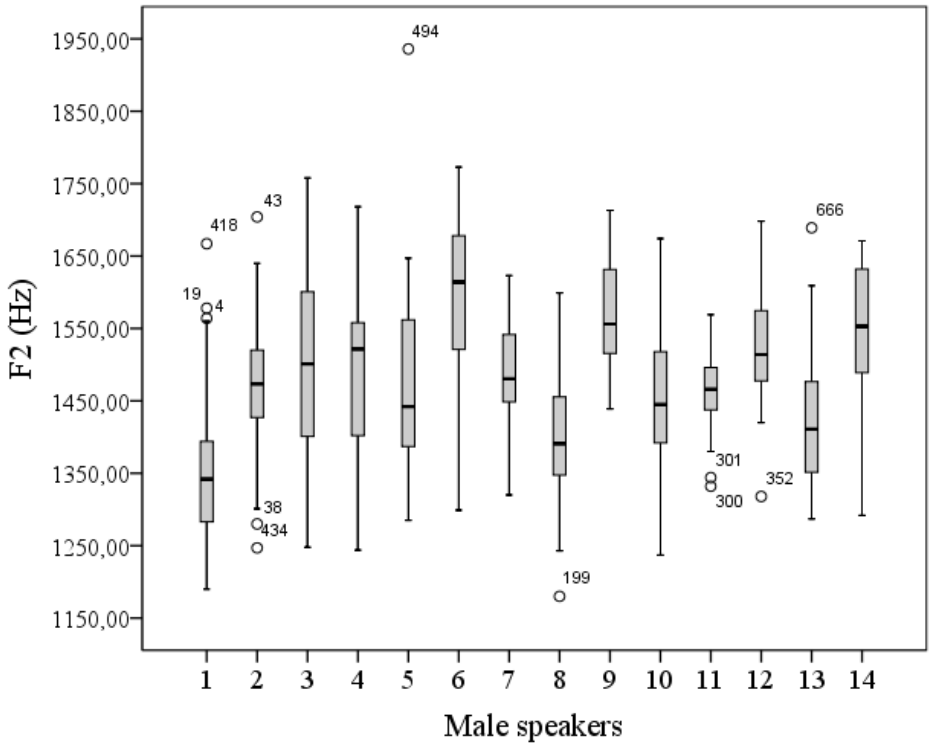


mant values indicate that tongue height in the majority (71.4%) of the male speakers is in some degree higher than traditionally reported for this vowel (see, eg Bolla 1978, Olaszy 1985). Thus, the inter-speaker variability of F1-values suggests that tongue moves in a very wide area in the oral cavity.

Figure 4 shows the male speakers' second formant values where the statistical analysis revealed again significant differences depending on speakers (one-way ANOVA: $F(13, 694) = 21{,}972$; $p = 0.001$). The Tukey post-hoc test confirmed more significant differences among speakers than we experienced it in the case of the first formants.

All male speakers differed from at least 4 other speakers, while 9 speakers differed from 5 or more other participants. Since the second formants indicate the tongue position in the oral cavity, we can see that only a few data fall into that frequency range which traditionally corresponds to back Hungarian vowels. There are three subjects (1, 8, 13) who can be distinguished from all the others depending on their relatively low F2-values, and another three subjects (6, 9, 14) who show higher F2-values than all the others. Eight speakers' data fall between the data of the six speakers

figure 4: Male speakers' second formant values of the vowel á



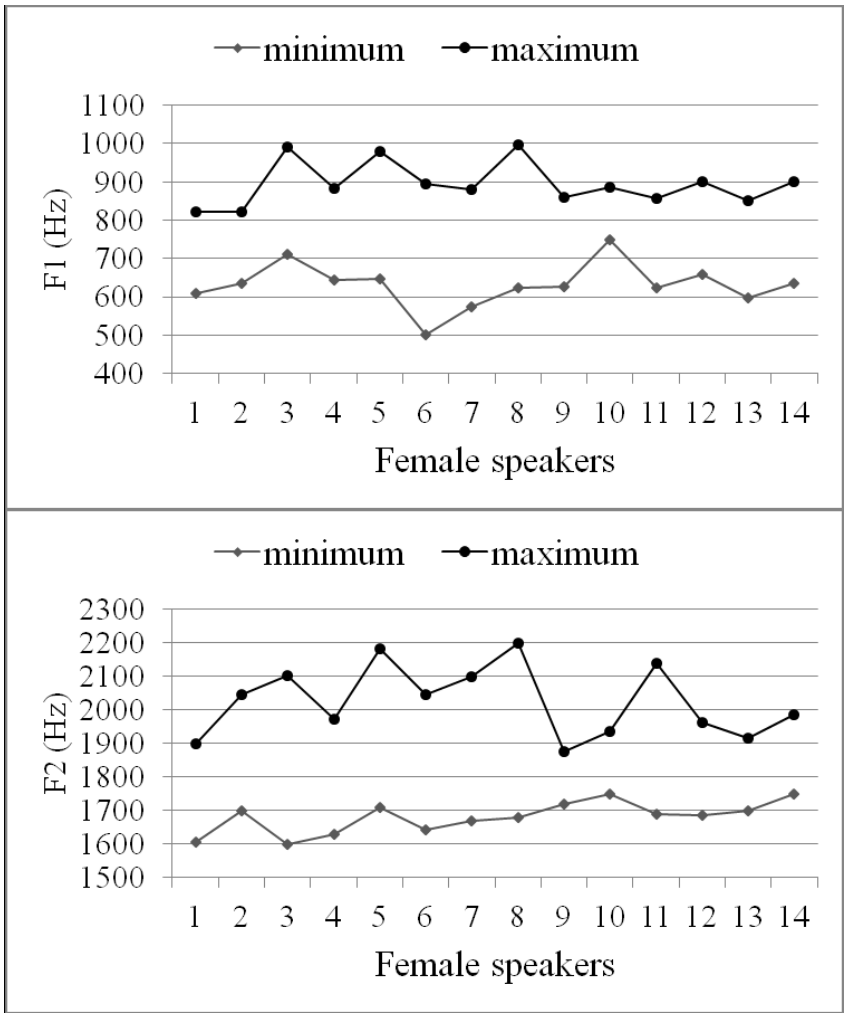
mentioned above, and they show considerable differences supported by the significant results of the post-hoc tests (eg 10 and 12).

We may draw the conclusion that male speakers pronounce the vowel *á* variably, between the back and the mid areas of the oral cavity, and this is more pronounced in the mid cavity. The same applies if we are looking at the intra-speaker data. Three male speakers (6, 9, 14) seem to clearly prefer the mid cavity, while one speaker (1) seems to articulate the vowel *á* as a real back vowel. The other speakers' tongue placement is mainly in the mid region of the oral cavity, but some of their data suggest backward articulation.

Considering all females' first formant values, the ranges show large intra-speaker differences with the frequency ranges of about 130 Hz and about 360 Hz (figure 5). The differences of the second formants are similar to those of F1 in terms of the speakers' articulation consistency. In some speakers (3, 4, 5, 6, 11) tongue placement may range in a relatively large domain in the oral cavity, while in others tongue placement occurs within a relatively narrow space (1, 9, 10 or 13). There are F2-values occurring

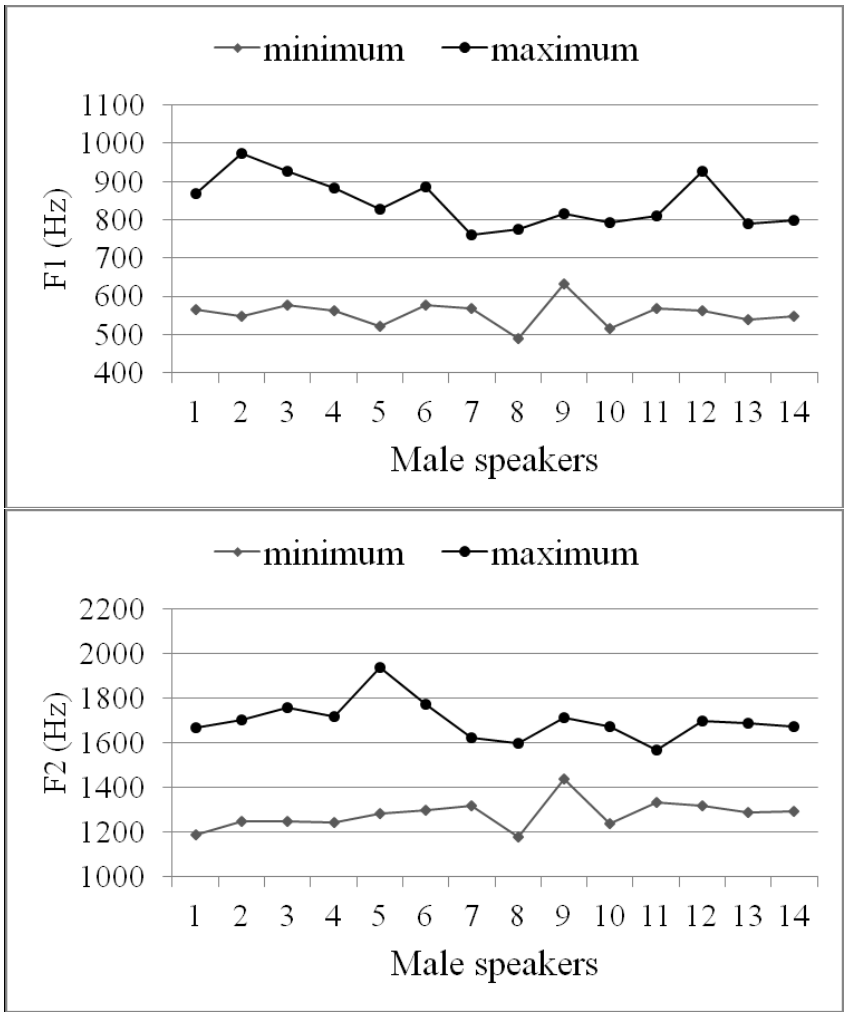
within a frequency range of about 450 Hz for the former type of female speakers and about 200 Hz for the latter type. Considering all the data from each speaker, intra-speaker differences are shown to be spectacular (figure 5).

figure 5: The minimum and maximum values of the first two formants in female speakers



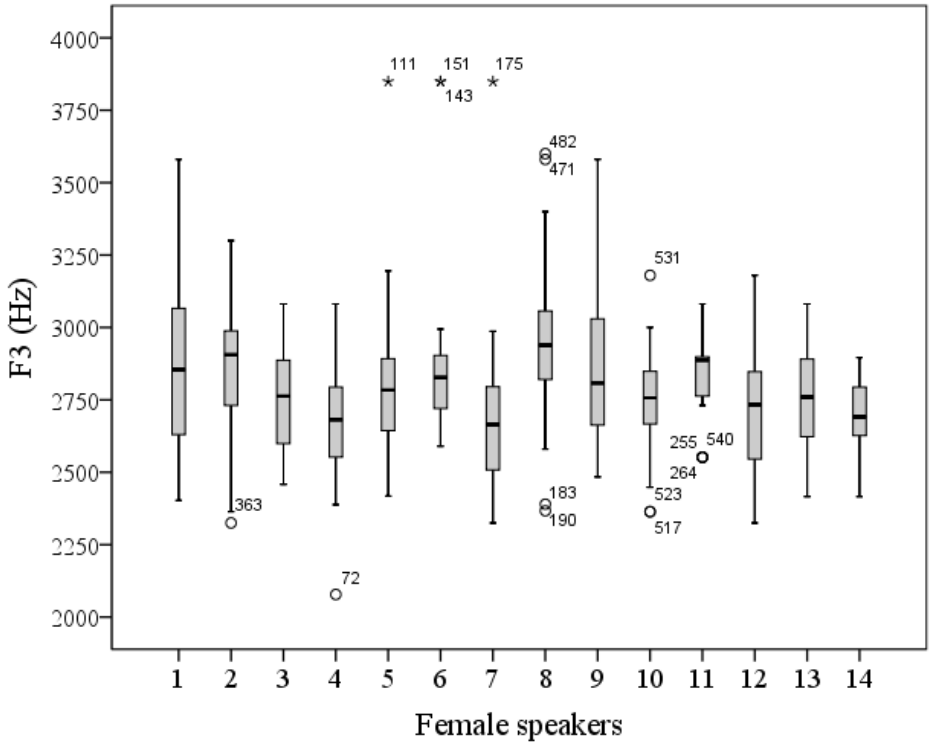
The within-speaker variability in males appears to be high. Most values occur within a frequency range of about 400 Hz for the less consistent male speakers while within a frequency range of about 250 Hz for the more consistent ones in the case of the first formant values (figure 6). Again, there are less consistent male speakers (with a frequency range of about 550 Hz) and more consistent male speakers (with a frequency range of about 300 Hz) when analyzing their second formant values, eg 5 as opposed to 11 (see figure 6).

figure 6: The minimum and maximum values of the first two formants in male speakers



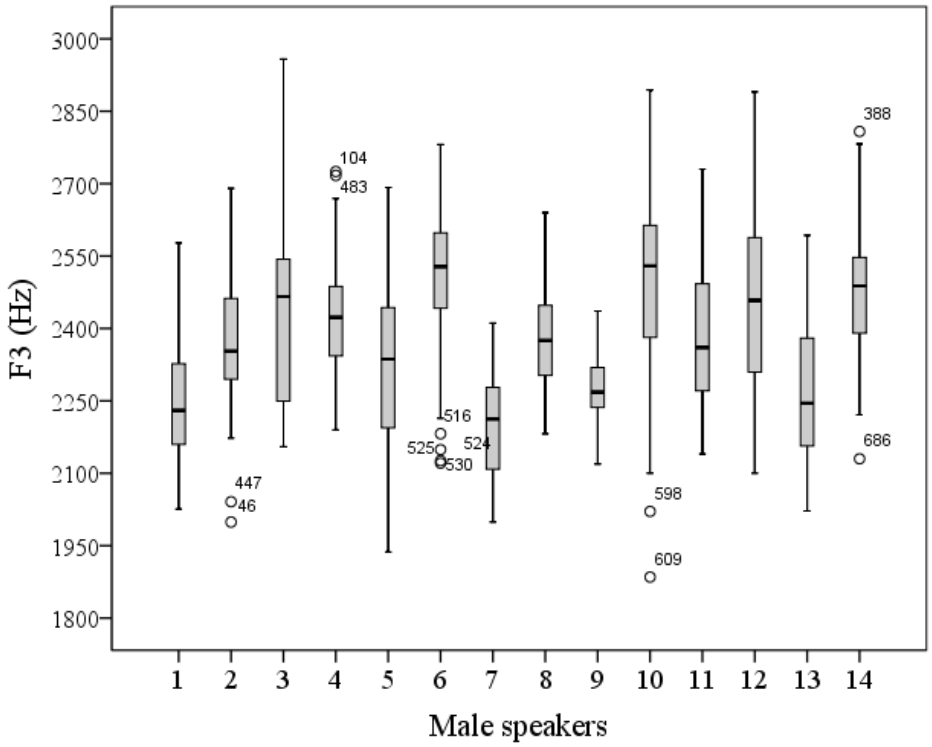
Third formants are claimed to be relatively stable across vowel tokens within a single speaker (Monahan & Idsardi 2010). Although in Hungarian it is also the first two formants that define vowel quality, we analyzed the third formants to see whether they show inter-speaker and intra-speaker variability. The females' third formants (see figure 7) vary in a relatively wide frequency range, mainly between 2500 Hz and 3100 Hz, the difference is statistically confirmed among speakers (one-way ANOVA: $F(13, 613) = 7{,}507$; $p = 0.001$). The Tukey post-hoc tests, however, did not yield significant differences in about two-third of the cases.

figure 7: Female speakers' third formant values of the vowel á



The seemingly large inter-speaker differences go together with similarly large intra-speaker differences resulting in considerable overlaps between speakers. There are only two females demonstrating relatively narrow frequency ranges for their third formants (about 400 Hz) while the F3-values of the majority of our female speakers show a frequency range

figure 8: Male speakers' third formant values of the vowel á



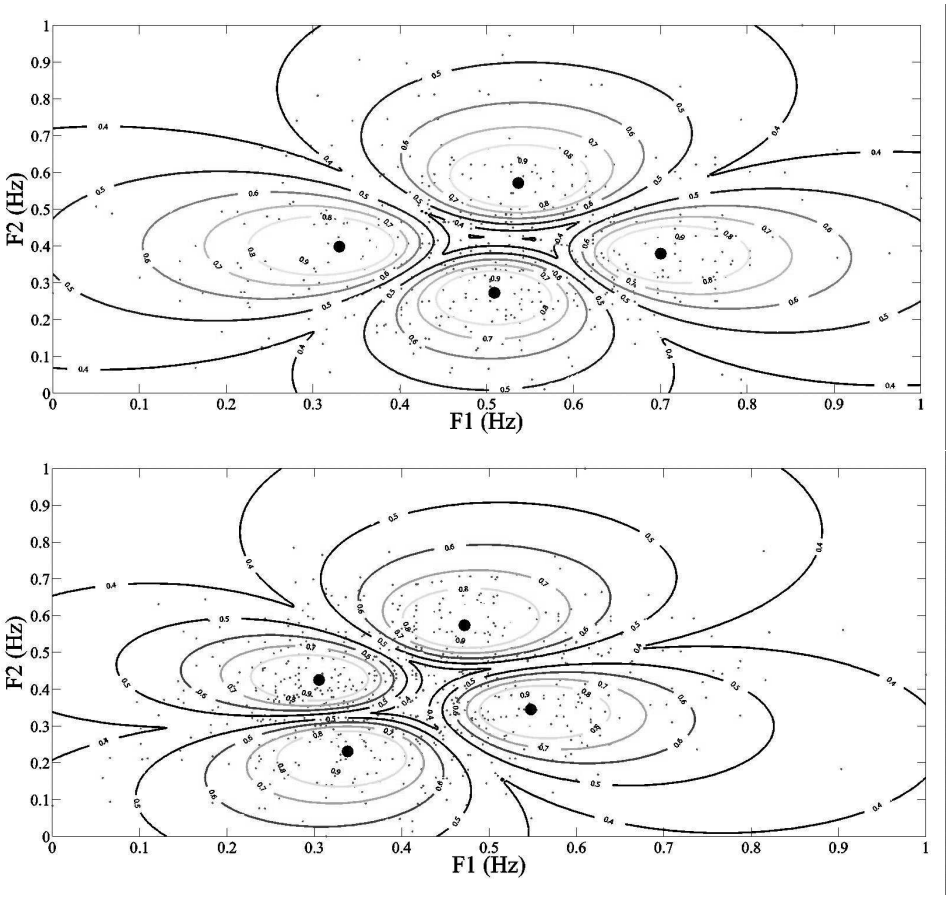
of about 800 Hz. Similar ratios of third formant values were found with the male speakers (see figure 8).

The values show enormous differences among the male speakers supported also by statistical analysis (one-way ANOVA: $F(13, 694) = 19{,}634$; $p = 0.001$). The frequency range differences are larger here (about 1000 Hz) than those found with the female speakers. The Tukey post-hoc tests confirmed larger individual differences among male speakers than in the case of female speakers. Intra-speaker differences are also large, resulting in overlaps among the male speakers as well. Our data show that third formants seem to be more characteristic of the male than of female speakers; however, our findings did not confirm the relatively stable frequency values for these formants (cf Monahan & Idsardi 2010).

Analyzing the speakers' first and second formant values, subgroups of vowels emerged both among females and males. We used the fuzzy clustering technique which is an unsupervised method used to partition the data elements into homogenous subgroups based on similarity distance measure. The elements do not necessarily belong to just one cluster

in this technique. The fuzzy C-means (FCM) algorithm (see Bezdek 1981) was used in this study to cluster the vowels into four subgroups where each one represents a bunch of typical realizations of the vowel *á.* The elements (which are the first two formant values in our case) in the FCM were normalized between 0 and 1. In the FCM algorithm each element has a degree that represents the similarity of one or more clusters. The degree of similarity increases towards the center of the subgroup (marked by the normalized values of the formants), see figure 9. These results identified four groups of vowels both in females and males based on the F1- and F2-values of the vowels. The subgroups and the circles indicate the large variability of vowels.

figure 9: Clustering results of vowels articulated by females (above) and by males (below) demonstrating four subgroups based on their normalized formant values



Conclusions

We analyzed the formant structure of the Hungarian vowel *á* based on spontaneous speech samples of 28 young adults. Our research focused on the inter-speaker and intra-speaker variability in the articulation of this vowel in terms of the acoustic consequences of horizontal and vertical tongue movements. The data obtained show that this traditionally back vowel is articulated in the mid of the oral cavity by males while in the front of the oral cavity by females. The values of the first two formants support the claim that, phonetically, it is not a back vowel. Although there are various (methodological) difficulties in comparing our data to those published in the literature decades ago, there can be no question that a synchronous change in the articulation of this vowel is in progress. Our claim is further supported by acoustic-phonetic data from old female speakers who seem to prefer back articulation of the vowel *á* (Bóna 2009). A change in horizontal tongue movement towards the front oral cavity in the articulation of a vowel was observed in 1972 in the Detroit area by Labov and colleagues. A similar sound change was reported about a Turkish vowel whose articulation moved from the back of the oral cavity to the front (Kiliç & Öğüt 2004).

The finding that inter-speaker differences show some gender dependency is worth further discussing. Differences between the formant values of the same speech sound between females and males can be interpreted as a consequence of their anatomical differences, the supposed "open" articulation of female speakers or their faster reaction to the newly invented articulation patterns (see Henton 1995, Diehl et al. 1996). Although several differences can be found in verbal communication between women and men (see, for instance, Eichhoff-Cyrus 1997, Lakoff 2004), no differences have been found in their verbal ability (Hyde & Linn 1988). There are several possible explanations for the seemingly slower articulation change in male speakers as opposed to more robust change in female speakers. Some researchers think that males follow the "articulation norm" more than females do. There is evidence that women take a leading role in sound change (Eckert 1989, Labov 1994); however, Trudgill found the opposite in most sound changes in Norwich (1972). Obviously, gender itself should not have an effect on sound change, but sometimes the gender of speakers who influence a sound change might be important. Based on our data, we can state that young Hungarian female speakers articulate the vowel *á* as a front vowel more than do males. Thus, this study supported the leading role of women in a sound change; however, further research is needed before making universal claims.

Since both groups of females and males in our study showed changes in their articulation gestures, we seek some explanation for this fact. The theory of perceptually triggered sound change (Blevins 2006, Ohala 2012) in our case cannot be a proper explanation since the vowel *á* is the only one articulated with the lowest tongue height, so there is no possibility to misperceive or to confuse it with another vowel. In addition, the change in horizontal tongue movement in this case would not be perceived by the listeners for the same reason. The large intra-speaker differences found support the gradual modification of the neural spectrograms from the old gestures toward new ones. Although at present less faith is placed in explanations of the sound change in terms of linguistic economy, we think that in this case such an explanation cannot be *ab ovo* excluded, at least as one of the factors influencing the change.

We assumed that a change is going on in the articulation of the vowel *á.* In addition, we supposed that there would be groups of vowels demonstrating different phases of this change. Analyses of the first two formants confirmed our hypotheses, which provide support for the existence of a synchronous change in the articulation gestures of this vowel. As expected, great variability was found among speakers, however, more importantly, intra-speaker variability was shown to be essentially as great as the inter-speaker variability. The final question is whether both the inter-speaker and intra-speaker variability is due to the synchronous sound change or this is simply a sign of the great variety of articulation gestures used by speakers in approaching a target vowel. Further analyses of the acoustic consequences of pronunciation are needed to find answers to this question.

REFERENCES

Beke András and Gráczi Tekla Etelka. 2010. A magánhangzók semlegesedése a spontán beszédben. In: Navracsics Judit (szerk.), *Nyelv, beszéd, írás. Pszicholingvisztikai tanulmányok I.* Veszprém: Pannon Egyetem. 57–64.

Benkő Loránd. 1988. *A történeti nyelvtudomány alapjai.* Budapest: Akadémiai Kiadó.

Bezdek, James C. 1981. *Pattern recognition with fuzzy objective function algorithms.* New York: Plenum Press.

Blevins, Juliette. 2006. A theoretical synopsis of Evolutional Phonology. *Theoretical Linguistics* 32 : 117–166.

Boersma, Paul and David Weenink. 2011. *Praat: doing phonetics by computer.* Retrieved on 25 October 2011 from www.fon.hum.uva.nl/praat/download_win.html.

Bolla Kálmán. 1978. A magyar beszédhangok akusztikai analízise és szintézise. *Magyar Fonetikai Füzetek* 1 : 53–67.

Bolla Kálmán. 1995. *Magyar fonetikai atlasz. A szegmentális hangszerkezet elemei.* Budapest: Nemzeti Tankönyvkiadó.

Bóna Judit. 2009. Az idős életkor tükröződése a magánhangzók ejtésében. *Beszédkutatás 2009*: 76–87.

Brunner, Jana, Satrajit Ghosh, Philip Hoole, Melanie Matthies, Mark Tiede, and Joseph Perkell. 2011. The influence of auditory acuity on acoustic variability and the use of motor equivalence during adaptation to a perturbation. *Journal of Speech, Language, and Hearing Research* 54 : 727–739.

Bybee, Joan. 2008. Formal universals as emergent phenomena: the origins of structure preservation. In: Jeff Good (ed.), *Linguistic universals and language change.* Oxford: Oxford University Press. 108–121.

Dankovičová, Jana and Francis Nolan. 1999. Some acoustic effects of speaking style on utterances for automatic speaker verification. *Journal of the International Phonetic Association* 29 : 115–229.

Diehl, Randy L., Björn Lindblom, Kathryn A. Hoemeke, and Richard P. Fahey. 1996. On explaining certain male-female differences in the phonetic realization of vowel categories. *Journal of Phonetics* 24 : 187–208.

Eckert, Penelope. 1989. The whole woman: Sex and gender differences in variation. *Language Variation and Change* 1 : 245–267.

Eichhoff-Cyrus, Karin (ed). 1997. *Adam, Eva und die Sprache.* Mannheim: Dudenverlag.

Fant, Gunnar. 1973. *Speech sounds and features.* Cambridge, MA & London: The MIT Press.

Gelfer, Marylou Pausewang and Victoria A. Mikos. 2005. The relative contributions of speaking fundamental frequency and formant frequencies to gender identification based on isolated vowels. *Journal of Voice* 19 : 544–554.

Gósy Mária. 1999. Az egyéni hangszínezet és a beszélő felismerésének kísérleti-fonetikai megközelítése. *Magyar Nyelvőr* 123 : 424–438.

Gósy Mária. 2004. *Fonetika, a beszéd tudománya.* Budapest: Osiris Kiadó.

Gósy, Mária. 2012. BEA — A multifunctional Hungarian spoken language database. *The Phonetician* 105/106 : 50–61.

Gráczi Tekla Etelka and Horváth Viktória. 2010. A magánhangzók realizációja spontán beszédben. *Beszédkutatás 2010*: 5–16.

Heđever, Mladen, Gordana Kovačič, and Višnja Barišić. 1999. Utjecaj pušenja i radnog staža na osnovni laringalni ton nastavnica. *Govor* XVI: 33–45.

Henton, Caroline. 1995. Cross-language variation in the vowels of female and male speakers. In: *Proceedings of the XIIIth International Congress of Phonetic Sciences.* Stockholm: Stockholm University. 420–423.

Hollien, Harry. 1990. *The acoustics of crime.* New York, London: Plenum Press.

Hyde, Janet S. and Marcia C. Linn. 1988. Gender differences in verbal ability: a meta-analysis. *Psychological Bulletin* 104 : 53–69.

Johnson, Keith. 1997. Speech perception without speaker normalization: An exemplar model. In: Keith Johnson and John W. Mullenix (eds.), *Talker variability in speech processing*. San Diego: Academic Press. 145–166.

Kahn, Juliette, Nicolas Audibert, Jean-François Bonastre, and Solange Rossato. 2011. Inter- and intra-speaker variability in French: an analysis of oral vowels and its implication for automatic speaker verification. In: *Proceedings of the XVIIth International Congress of Phonetic Sciences.* Hong Kong: University of Hong Kong. 1002–1005.

Kassai Ilona. 1998. *Fonetika.* Budapest: Nemzeti Tankönyvkiadó.

Kempelen Farkas. 1989 [1791]. Az emberi beszéd mechanizmusa, valamint a szerző beszélőgépének leírása. Ford. Mollay Károly. Budapest: Szépirodalmi Könyvkiadó.

Kiliç, Mehmet Akif and Fatih Öğüt. 2004. A high unrounded vowel in Turkish: is it a central or back vowel? *Speech Communication* 43 : 143–154.

Kiss Jenő and Pusztai Ferenc (szerk.). 2005. *Magyar nyelvtörténet.* Budapest: Osiris Kiadó.

Kovács Magdolna. 2004. Pros and cos about Hungarian [a:]. *Grazer Linguistische Studien* 62 : 65–75.

Künzel, Herman J. 1995. Field procedures in forensic speaker recognition. In: Jack Windsor Lewis (ed.), *Studies in general and English phonetics. Essays in Honour of Professor John D. O'Connor.* London: Routledge. 68–85.

Labov, William. 1994. *Principles of linguistic change I. Internal factors.* Oxford: Basil Blackwell.

Labov, William, Malcah Yaeger, and Richard Steiner. 1972. A quantitative study of sound change in progress. Philadelphia: U.S. Regional Survey.

Ladefoged, Peter. 1975. *A course in phonetics.* New York: Harcourt Brace Jovanovich.

Lakoff, Robin. 2004. Language and a woman's place. In: Mary Bucholtz (ed.), *Language and a woman's place.* New York: Oxford Universtity Press. 39–76.

Lindblom, Björn. 1983. Economy of speech gestures. In: Peter MacNeilage (ed.), *The production of speech.* New York: Springer. 217–245.

Lindblom, Björn. 1990. Explaining phonetic variation: a sketch of the H and H theory. In: William J. Hardcastle and Alain Marchal (eds.), *Speech production and speech modeling.* Dordrecht: Kluwer. 403–440.

Lindblom, Björn, Randy Diehl, and Carl Creeger. 2009. Do 'Dominant Frequencies' explain the listener's response to formant and spectrum shape variations? *Speech Communication* 51 : 622–629.

Magdics Klára. 1965. *A magyar beszédhangok akusztikai szerkezete.* Nyelvtudományi Értekezések 49. Budapest: Akadémiai Kiadó.

McDougall, Kirsty. 2006. Dynamic features of speech and characterization of speakers: towards a new approach using formant frequencies. *Speech Language and the Law* 13 : 89–126.

Molnár József. 1970. *A magyar beszédhangok atlasza.* Budapest: Tankönyvkiadó.

Monahan, Philip J. and William J. Idsardi. 2010. Auditory sensitivity to formant ratios: Toward an account of vowel normalization. *Language and Cognitive Processes* 25 : 808–839.

Mooshammer, Christine, Pascal Perrier, and Susanne Fuchs. 2008. Speaker-specific patterns of token-to-token variability. *Journal of the Acoustical Society of America* 123 : 3076.

Obleser, Jonas, Thomas Elbert, Aditi Lahiri, and Carsten Eulitz. 2003. Cortical representation of vowels reflects acoustic dissimilarity determined by formant frequencies. *Cognitive Brain Research* 15 : 207–213.

Ohala, John. 1993. The phonetics of sound change. In: Charles Jones (ed.), *Historical linguistics: Problems and perspectives.* Harlow: Longman. 237–278.

Ohala, John J. 2012. The listener as a source of sound change (perception, production, and social factors). In Maria-Josep Solé and Daniel Recasens (eds.), *The initiation of sound change.* Amsterdam: John Benjamins. 21–36.

Olaszy Gábor. 1985. *A magyar beszéd leggyakoribb hangsorépítő elemeinek szerkezete és szintézise.* Nyelvtudományi Értekezések 121. Budapest: Akadémiai Kiadó.

Perkell, Joseph S., Melanie L. Matthies, Harlan Lane, Frank H. Guenther, Reiner Wilhelms-Tricarico, Jane Wozniak, and Peter Guiod. 1997. Speech motor control: Acoustic goals, saturation effects, auditory feedback and internal models. *Speech Communication* 22 : 227–250.

Pettigrew, Andrew M. 1990. Longitudinal field research on change: Theory and practice. *Organization Science* 1 : 267–292.

Pierrehumbert, Janet. 2001. Exemplar dynamics: Word frequency, lenition, and contrast. In Joan Bybee and Paul Hopper (eds.), *Frequency effects and the emergence of linguistic structure.* Amsterdam: John Benjamins. 137–157.

Recasens, Daniel and Aina Espinosa. 2006. Dispersion and variability of Catalan vowels. *Speech Communication* 48 : 645–666.

Shiller, Douglas M., Rafael Laboissière, and David J. Ostry. 2002. Relationship between jaw stiffness and kinematic variability in speech. *Journal of Neurophysiology* 88 : 2329–2340.

Slifka, Janet. 2005. Acoustic cues to vowel-schwa sequences for high front vowels. *Journal of the Acoustical Society of America* 118 : 2037.

Tarnóczy, Tamás. 1965. Acoustic analysis of Hungarian vowels. *Quarterly Progress and Status Report* 1 (Speech Transmission Laboratory–KHT, Stockholm): 8–12.

Trudgill, Peter. 1972. Sex, covert prestige, and linguistic change in the urban British English of Norwich. *Language in Society* 1 : 179–195.

Varga László. 2012. Van-e magyar mellékhangsúly? In: Markó Alexandra (szerk.), *Beszédtudomány. Az anyanyelv-elsajátítástól a zöngekezdési időig.* Budapest: ELTE, MTA Nyelvtudományi Intézet. 35–49.

Vértes O. András. 1982. Az artikuláció akusztikus vetülete. In: Bolla Kálmán (szerk.), *Fejezetek a magyar leíró hangtanból.* Budapest: Akadémiai Kiadó. 155–165.

Wardhaugh, Ronald. 1995. *Szociolingvisztika.* Budapest: Osiris–Századvég.

Mária Gósy
gosy.maria@nytud.mta.hu
Research Institute for Linguistics,
Hungarian Academy of Sciences

Approaching the prosody of Hungarian wh-exclamatives*

Beáta Gyuris and Katalin Mády

1 Introduction

1.1 The exclamative in the system of sentence types

In theoretical classifications of clause or sentence types (eg Sadock & Zwicky 1985 and König & Siemund 2007), exclamatives are traditionally considered to be outside of the set of *basic sentence types* (constituted by declaratives, interrogatives and imperatives), and to belong to the set of *minor sentence types* (together with optatives, among others). The basis for this distinction is that whereas declaratives, interrogatives and imperatives are all definable with the help of a small number of necessary and sufficient formal criteria in the natural languages where they occur, there do not seem to be equally available unambiguous formal criteria for setting apart structures that express the meaning attributed to exclamatives. This meaning is described by König & Siemund as "an affective response to what is taken to be a fact," namely, "convey[ing] the speaker's surprise that some present situation is remarkable" (2007 : 316). These authors note that in most cases, the sentences expressing the structural meaning described above are syntactically identical to either declaratives or interrogatives in the same languages, and the only property they share among themselves is their intonation pattern.

Rosengren (1992, 1994), closely following Brandt et al. (1992 : 78), argues strongly against intonation being a marker of clause or sentence types, primarily on the basis of the fact that it cannot be used to differentiate between embedded clause types. Rosengren believes instead that all excla-

* Research for the paper was supported by funds from the Hungarian Scientific Research Fund under projects NK 100804 (to the first author) and PD 101050 (to the second author).

mative sentences belong either to the *declarative* or the *interrogative* form types, their special interpretational feature being orthogonal to those features that distinguish between sentence types. This interpretational feature is the expression of a specific expressive illocutionary type, which is directly connected to "emphatic stress."

In the framework proposed by Altmann (1993), prosodic properties are assumed to have a role parallel to syntactic and morphological ones in distinguishing between German sentence types, and thus exclamatives are treated on a par with declaratives and interrogatives. (Altmann (1993) does not discuss embedded clauses, therefore, the problem pointed out by Rosengren does not arise here.)

1.2 Exclamatives in Hungarian

According to the traditional Hungarian view on sentence types (cf Károly 1964), exclamatives are one of the five sentence types, having equal status with declaratives, interrogatives, imperatives and optatives. Károly claims that in order to be classified as an exclamative, a sentence has to satisfy the following four formal criteria: it must bear a so-called "emotional" intonation, and it may not possess the defining features of optatives, imperatives or interrogatives (1964 : 79). Although he does not describe what the properties of the "emotional" intonation exactly are, he argues, on the one hand, that it is not restricted to exclamatives, but can also appear on optatives, imperatives and interrogatives, and, on the other hand, that there is no specific intonation pattern characterizing all exclamative sentences. These assumptions are compatible with the possibility that the "emotional" intonation patterns of structurally different subtypes of exclamatives are different in Hungarian.

The above claims seem to entail that the primary example given for the exclamative sentence type in Lipták (2006), shown in (1), cannot be classified as an exclamative in Károly's framework, since this example is not only string-identical to a wh-interrogative sentence, shown in (2),[1] but the two can also be assigned identical syntactic structures (as shown in Lipták 2006).[2]

[1] For reasons of perspicuity, unless otherwise noted, Lipták's (2006) examples are shown here without the optional sentence-initial conjunction *hogy*.

[2] In the glosses, *pv* denotes the verbal prefix, which belongs to the class of verbal modifiers, cf É. Kiss 2002.

(1) Hány könyvet vettél meg!
how.many book-ACC bought-2SG PV
'You bought so many books!'
(Lipták 2006 : 353, ex. (21a))

(2) Hány könyvet vettél meg?
how.many book-ACC bought-2SG PV
'How many books did you buy?'

The wh-expressions in wh-interrogatives are standardly assumed to occupy the specifier of a Focus Phrase (*focus position* for short) within the hiearchically structured preverbal field of Hungarian, shown in (3). (Cf É. Kiss 2002 for further discussion.) The verb moves to the head of the Focus Phrase, leaving the verbal modifier behind. Following common practice, in what follows, the verb-modifier order will be referred to as one involving *inversion.*

(3) $[_{CP}\ [_{TopP*}\ [_{DistP*}\ [_{FocP}$ focus $V^0\ [_{AspP}$ pv . . .]]]]]
(Lipták 2006 : 362, ex. (40))

Lipták (2006) assumes that in sentences like (1) the wh-expression (or *exclamative phrase*, ExclP) also occupies the focus position. The structure she assigns to such sentences is repeated with inessential notational modifications in (4):

(4) $[\ . . .\ [_{FocP}$ ExclP $V^0\ [_{AspP}$ pv . . .]]]
(slightly modified version of Lipták 2006 : 362, ex. (51b))

There exists, however, a well-formed variant of (1) with an identical interpretation, shown in (5), where the verbal prefix is situated in an immediately preverbal position. This sentence does not have a string-identical interrogative counterpart:

(5) Hány könyvet megvettél!
how many book-ACC PV-bought-2SG
'You bought so many books!'

Lipták (2006) argues that in examples like (5) the wh-expression is not in the focus position but is situated within the DistP field (referred to by DistP* in (3)), which consists of a range of distributive quantifiers, argued

to be freely permutable by Szabolcsi (1997) and É. Kiss (2002). Kálmán (2001) observes, however, that emphatic *sok* 'many'-expressions can only follow but cannot precede universal quantifiers within this field.[3] The contrast is illustrated in (6)–(7):

(6) Mindenhova 'sok lányt meghívott János.
everywhere.to many girl-ACC PV-invited János
'János invited many girls to every place.'
(Lipták 2006 : 364, ex. (45a))

(7) * 'Sok lányt mindenhova meghívott János.
many girl-ACC everywhere.to PV-invited János
intended: 'Many girls were invited by János everywhere.'
(Lipták 2006 : 364, ex. (45b))

Lipták (2006) proposes that whenever the wh-phrase is followed by the prefix-verb order in exclamative sentences it is situated in the last position of the DistP field, the same position that *sok*-phrases occupy in sentences like (6), referred to by her as *many*P. The relevant structure is shown in (8).

(8) [. . . [$_{manyP}$ ExclP [$_{AspP}$ pv-V [. . .]]]]
(minimally modified version of Lipták 2006 : 362, ex. (51a))

Lipták considers both (1) and (5) as representatives of the exclamative sentence type.

As the acceptability of both (1) and (5) illustrate, in certain cases, inversion between the verb and the verbal modifier is optional. In a second group of cases, however, the corresponding wh-exclamatives and interrogatives are necessarily string-identical, either because there is no verbal modifier attached to the verb that could be in two places with respect to the verb, as in (9), or because the wh-expression is not compatible with the non-inverted order, as the contrast between (10) and (11) shows:

(9) Hova bújtak a gyerekek!
where.to hid-3PL the children
'In what strange places the children hid!'
(Lipták 2006 : 346, ex. (4c))

[3] The relevant section in Kálmán (2001) is authored by Attila Novák.

(10) Melyik könyvet vetted meg!
which book-ACC bought-2SG PV
'(I am surprised at) which book you bought!'
(Lipták 2006 : 346, ex. (4e))

(11) *Melyik könyvet megvetted!
which book-ACC PV-bought-2SG
intended: '(I am surprised at) which book you bought!'

In a third group of cases, the exclamative can only occur with the non-inverted order, making it necessarily different from the corresponding interrogative:

(12) Mennyire nőtt meg Éva?
how.much grew-3SG PV Éva
'How much has Éva grown?'

(13) *Mennyire nőtt meg Éva!
how.much grew-3SG PV Éva
intended: 'How much Éva has grown!'
(Lipták 2006 : 351, ex. (17a))

(14) Mennyire megnőtt Éva!
how.much PV-grew-3SG Éva
'How much Éva has grown!'
(Lipták 2006 : 351, ex. (17a))

Lipták (2006) provides an exhaustive list of the wh-expressions that represent each of the above patterns, although she does not explain for all exclamative phrases what principles their category membership is to be derived from. Since we disagree with her concerning the acceptability of certain wh-expressions with the prefix-verb ordering, we prefer not to quote her classification here.[4] Detailed discussion of the points of disagreement will have to be left for another occasion, however.

Lipták argues that the two syntactic classes of exclamatives have an identical prosodic form, consisting of a "stress on the E[xclamative]-phrase

[4] For example, whereas Lipták (2006) assumes that *ki* 'who' can only occur in exclamatives in the focus position, we believe that it can be followed by the prefix-verb order, depending on the properties of the situation described.

and falling intonation following it" (2006 : 345, fn. 3). Similar claims are made in Kálmán (2001 : 137), where the prosody of wh-exclamatives is characterized as a "high tone followed by a slow descent."

To our knowledge, no systematic investigation has been carried out on the prosody of Hungarian exclamatives so far. Curiously, they are missing from Fónagy & Magdics's (1967) detailed survey as well. In sections 2–4 of this paper we present the first results of a study that aimed at the description of the prosody of one subclass of exclamatives, the so-called wh-exclamatives, based on experimentally-based data collection and analysis, which compared the prosodic properties of representatives of this sentence type to those of wh-interrogatives.[5]

Wh-interrogatives in Hungarian, illustrated in (2) above, have a falling intonation contour. (Cf Varga 2002 for further discussion.) According to É. Kiss (2002), the strongest accent within the Hungarian sentence falls on the left edge of the predicate part, that is, the part following the sentence-initial topic positions (Spec,TopP), which thus includes both the DistP field and the Focus Phrase. This entails that in interrogatives containing a single wh-expression, the latter bears the strongest accent (it cannot be preceded by distributive quantifiers, cf Szabolcsi 1997 and É. Kiss 2002), and the following verb is deaccented (the accent on the focus is an *eradicating* one, see Kálmán & Nádasdy 1994).[6]

According to Mycock (2010), who provides an intonational description of wh-interrogatives in Hungarian, the wh-word bears a falling pitch accent (H+L), which is identical to the pitch accent patterns found in preverbal foci (Mády 2012). Besides, Mycock claims that the wh-word in Hungarian interrogatives can optionally be preceded by a high tone (2010 : 284).

Regarding wh-exclamatives, an empirically based description of their prosody is not available yet. Therefore, it is not known whether the wh-word is always accented and whether it is the only accented word within the sentence.

[5] See Lipták 2006 for the discussion of the syntax of further subtypes of the exclamative sentence type.

[6] As noted by Varga (1982), there are cases where wh-expressions get deaccented as a result of being preceded by accented expressions having a focus interpretation, as in (i):

'Péter milyen nyelvet tanul?
Péter what language-ACC learns
'What language does 'Peter learn?'

The question whether the above observation is relevant for the prosody of exclamatives would need further investigation.

Before turning to our own experiments, we summarize the findings of some relevant studies on other languages.

1.3 Recent experimental studies on the prosody of exclamatives

Batliner (1988, 1989) follow Altmann (1987) in assuming that, at least in German, prosodic distinctions do not only differentiate between subtypes of major sentence types but they alone can serve to discriminate between two genuine sentence types, and that exclamatives constitute a sentence type of their own, though differing from some of the rest in terms of intonation only.

Thus, Batliner (1988) looks at the prosodic differences between verb-second sentences equally classifiable as declaratives and exclamatives in German, whereas Batliner (1989) investigates verb-initial sentences equally classifiable as *yes-no* interrogatives and exclamatives.

The perception experiments reported in Batliner (1988) indicate that a rise in the height of the f0-peak and the movement of the peak out of its neutral position results in a verb-second sentence being classified as an exclamative rather than as a declarative, although there seems to be no single prosodic factor that unambiguously marks a sentence of this type as an exclamative. Batliner (1989) found that in verb-initial sentences produced with an initial fall and a final rise, steep final rises exclude the exclamative interpretation (the steepness thus constituting the primary dimension). With less steep rises, the slope of the fall (constituting a secondary dimension) also plays a role: a steeper initial fall tends to trigger the sentence being classified as an exclamative.

Sorianello's (2012) production and perception study compares the prosody of non-wh-exclamatives and declaratives having broad focus in Bari, a southern dialect of Italian. The production study targeting string-identical exclamatives and declaratives found high onset values for exclamatives (4 semitones higher than for the corresponding declaratives), followed by a fall only in the proximity of the last word, a raised baseline (about 3 semitones higher than that of the declaratives), and a larger pitch range (4 semitones larger than in declaratives). Exclamatives were faster at the beginning but slower at the end than their declarative counterparts, and had a greater mean intensity. The phonological descriptions offered by the author reflect these results in the following way. For exclamatives, a %H left boundary tone is postulated, and a high (H* or H*+L) nuclear pitch accent. Declaratives (with broad focus) are claimed to have a nuclear pitch accent realized by a bitonal falling tone, H+L* (or !H+L*). Since the

final contour of both sentence types is falling, the phrase-final boundary tone is assumed to be low for both, L%.

In Sorianello's (2012) perception experiment, subjects first heard short and then increasingly longer parts of the same sentences, and they had to decide each time whether the relevant parts were taken from a declarative or an exclamative. According to her results, exclamatives were better recognized on the basis of the initial string, which indicates the importance of the height of the initial f0 in distinguishing between the two sentence types.

2 Materials and methods

Following the threefold classification of wh-exclamatives outlined above, which was based on the availability of the two possible preverbal positions for the wh-expression, we investigated three major classes of interrogative-exclamative pairs in our production experiments:

1. necessarily string-identical wh-interrogatives and wh-exclamatives: class 1 (without prefix: class 1a, with obligatory inversion: class 1b),
2. sentence pairs that are consistently distinguished by the presence of inversion (interrogative) and its absence (exclamative): class 2,
3. sentence pairs where inversion is optional for exclamatives and obligatory for interrogatives: class 3.

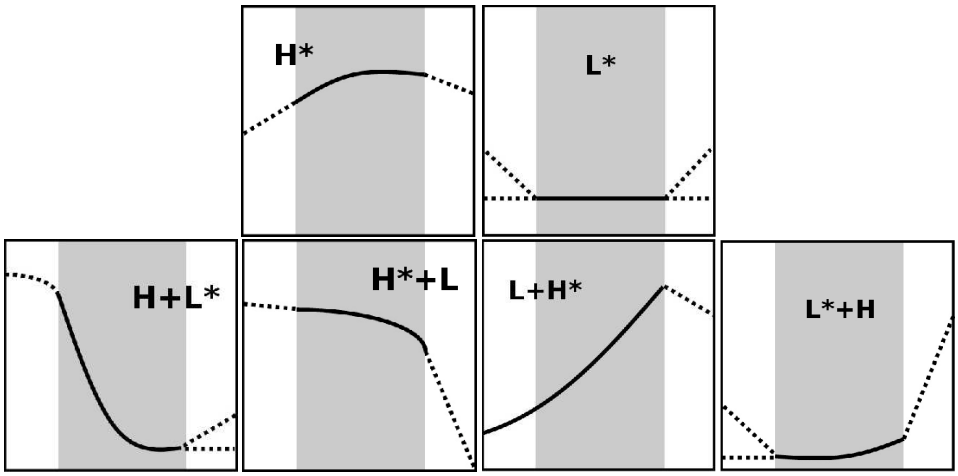
Each target sentence was presented in two contexts consisting of up to three sentences, to ensure that the target was correctly interpreted as a question (corresponding to an interrogative sentence) or an exclamation (corresponding to an exclamative sentence). All classes were represented by five interrogatives plus, in classes 1 and 2, one exclamative counterpart for each, and in class 3, two exclamative counterparts for each (with and without inversion), totalling in 45 stimulus sentences.

The texts including the target sentences were read by five subjects (3 females) between 20 and 45 years of age, in a silent environment, without repetition, in a sequential order. The material was recorded via a head-mounted microphone and an external sound card to a laptop.

Prosodic analysis was based on tonal categories and parametric measurements. Categories followed roughly those proposed in ToBI (Silverman et al. 1992), but they were phonetic rather than phonological notations of the pitch accent types. This means that a rising f0 within the accented syllable was labelled either L+H* or L*+H, the latter starting with a low plateau throughout the stressed vowel, and a falling f0 was labelled either H+L* or H*+L, again, the latter having a high plateau throughout

the stressed vowel. H* and L* mark high and low accents without considerable movement within the accented syllable. Pitch accent labels are demonstrated in figure 1.

figure 1: Pitch accent labels used in the present material. The grey areas refer to pre- and postvocalic consonants, the white area to the stressed vowel. Labels are adopted from GToBI, see www.gtobi.uni-koeln.de/ta_tonakzente.html



The following categories were used for labelling:

- pitch accent type,
- phrase-initial boundary tone (%H, %M, %L),
- phrase-final boundary tone (H%, M%, L%).

Since Hungarian has not been described in the framework of Intonational Phonology, there is no evidence for or against the presence of a mid (M) boundary tone in this language. We do not intend to argue for any of the alternatives at this point, but if the M tone should turn out to be relevant, distinctions based on it should not be overlooked in this analysis. The same is true for phrase-initial boundary tones: although the original ToBI system based on American English does not make use of them, they have been shown to be distinctive in other languages such as Dutch (Gussenhoven 2005).

Parametric measurements involved measurements of f0 and of durations:

- f0 maximum, f0 minimum and f0 range within the initial CVC-sequence of the wh-expression regardless of its syllable structure,

- sentence-initial f0 (first measurable value),
- sentence-final f0 (last measurable value on the last vowel),
- duration of the initial CVC-sequence of the wh-word (bearing the strongest accent).

F0 values were measured in semitones, CVC-durations were normalised to the duration of the entire sentence.

3 Results

3.1 Categorical description

All target sentences were realized with a single pitch accent that was located on the wh-word. The category of pitch accents showed a different distribution in the two sentence types: interrogatives had either H* pitch accents or falling ones (H*+L or H+L*), whereas exclamatives nearly always had rising L+H* accents (see figure 2). The distinction was consistent for all classes, no matter whether the corresponding interrogative-exclamative pairs were string-identical or not.

figure 2: Distribution of pitch accent types on wh-word, left: interrogatives, right: exclamatives

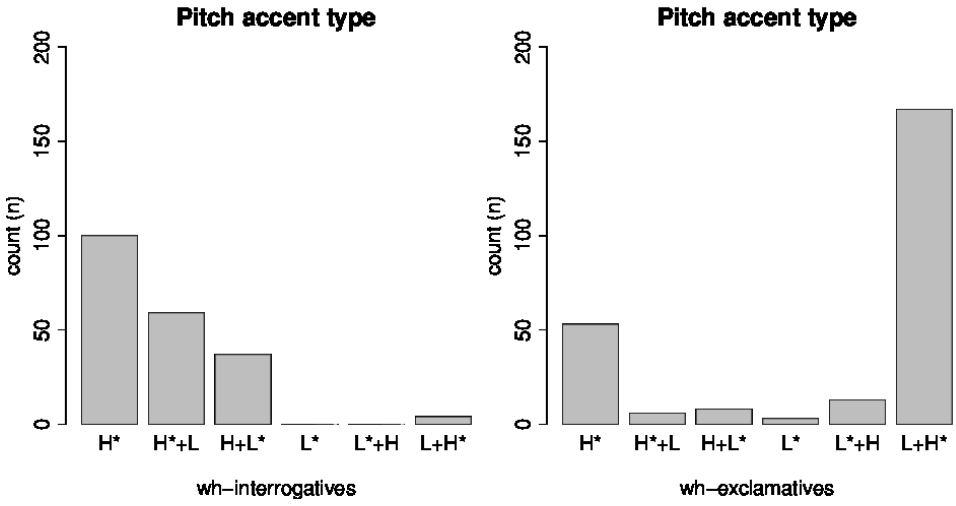


figure 3: Distribution of phrase-initial boundary tones, left: interrogatives, right: exclamatives

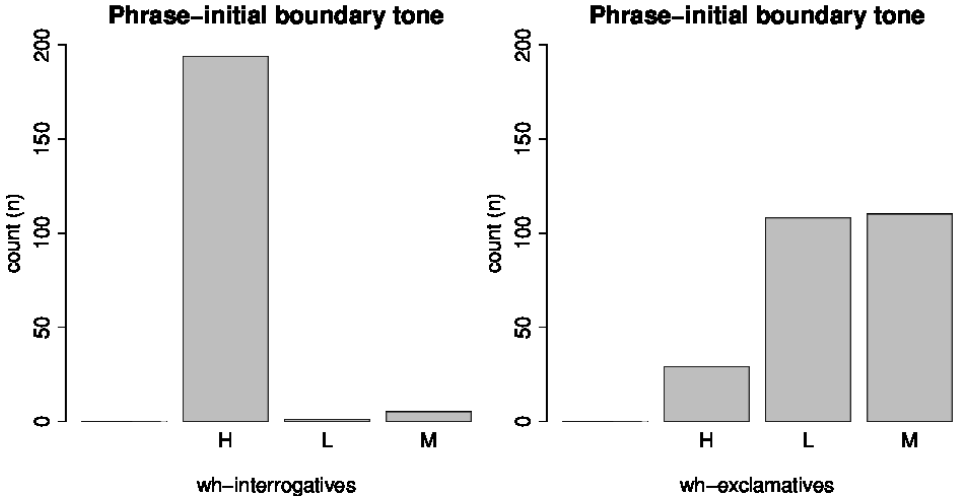
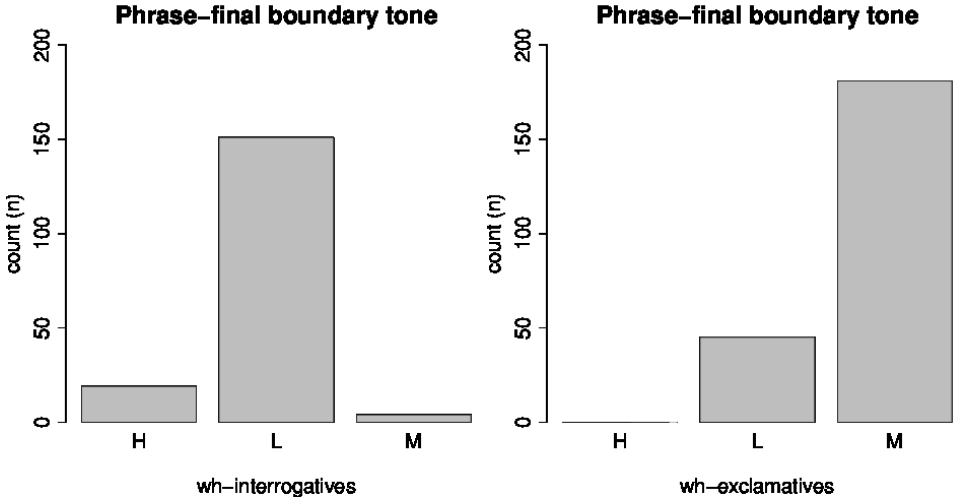


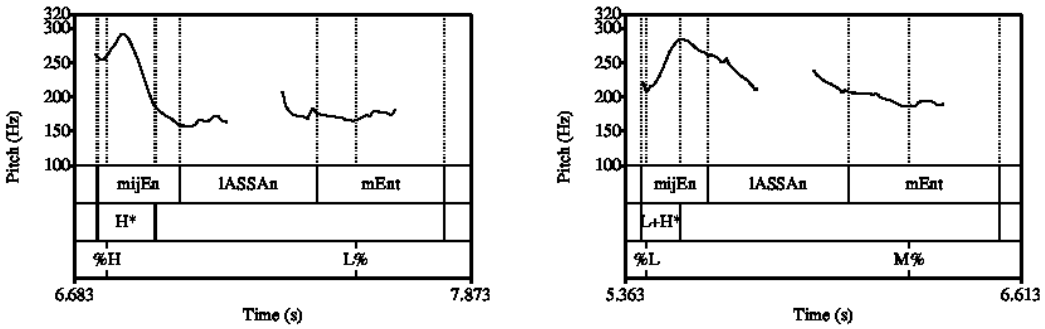
figure 4: Distribution of phrase-final boundary tones, left: interrogatives, right: exclamatives



As for boundary tones, interrogatives were always characterised by a phrase-initial %H boundary tone, exclamatives by an %M or %L tone (see figure 3). Phrase-finally, interrogatives had H% boundary tones, exclamatives %M boundary tones (see figure 4).

According to the categorical results, wh-interrogatives typically start with a high phrase-initial boundary tone followed by a high or a falling pitch accent and a low phrase-final boundary tone, whereas wh-exclamatives start with a mid or low initial boundary tone followed by a rising pitch accent and a mid final boundary tone. This is shown in figure 5.

figure 5: String-identical sentences, left: wh-interrogative, right: wh-exclamative, produced by the same female speaker. The first tier shows the f0 contour, the second the SAMPA-transcription of the words, the third the category of the pitch accent related to the initial CVC-sequence of the wh-expression, the fourth the onset and offset of the reliably measurable f0 curve and the boundary tone.



In the next section it will be tested whether different boundary tones are in fact manifested in measurable f0 differences sentence-initially and sentence-finally.

3.2 Parametrical analysis

Statistical analysis was based on repeated-measures multivariate ANOVA (RM MANOVA) tests. This procedure has the advantage that within-speaker differences can be taken into account (similarly to RM ANOVA), and that sphericity (equality of variances between single factor levels) is not assumed, which is a necessary condition for RM ANOVA.

In our data, the f0 maximum of the pitch accent was more than 3 semitones higher in interrogatives than in exclamatives. This difference was significant for all classes of target sentences on the $p < 0.05$ level, although there was only a corresponding tendency for sentence pairs in class 1 (string-identical sentences, $p = 0.059$, see figure 6). Similarly, the f0 minimum in interrogatives was in average 2.75 semitones higher than

*figure 6: F0 maximum differences in semitones between exclamatives (*excl*) and interrogatives (*ir*) per speaker*

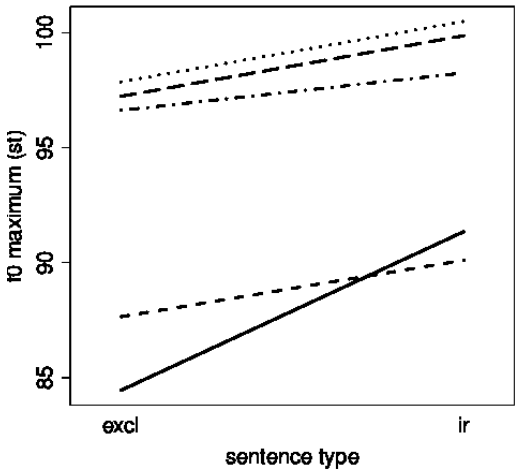
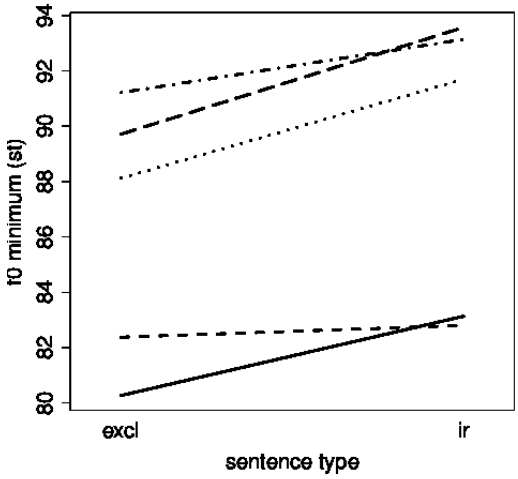


*figure 7: F0 minimum differences within the accented CVC sequence in semitones between exclamatives (*excl*) and interrogatives (*ir*) per speaker*



in exclamatives, and this difference was significant for all classes (see figure 7). At the same time, pitch range did not differ significantly between the two sentence types in any of the three different classes. This is due to the variable behaviour between speakers: the two male speakers had wider pitch ranges for interrogatives, female speakers for exclamatives.

*figure 8: Sentence-initial f0 differences in semitones between exclamatives (*excl*) and interrogatives (*ir*) per speaker*

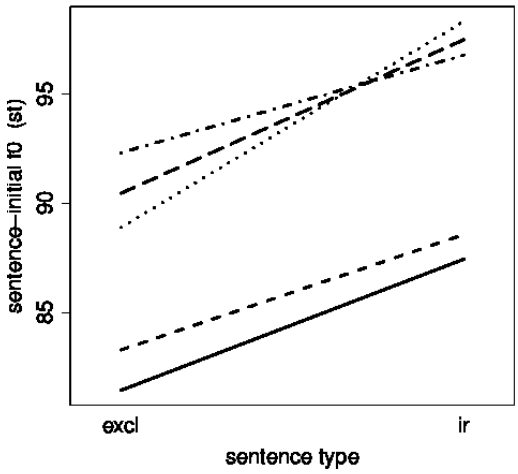
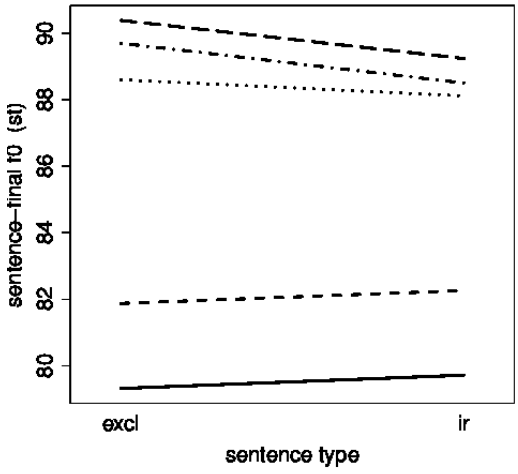


*figure 9: Sentence-final f0 differences in semitones between exclamatives (*excl*) and interrogatives (*ir*) per speaker*



Sentence-initial f0 was in average 6 semitones higher in interrogatives than in exclamatives (significant difference in all three classes, see figure 8). At the same time, phrase-final f0 in interrogatives was only 0.24 semitones lower than in exclamatives, and the difference was not significant for any of the classes (see figure 8).

4 Discussion and conclusions

The distinction between wh-interrogatives and wh-exclamatives by means of intonation is very robust both on the categorical and the parametrical level. The tonal description of wh-interrogatives and wh-exclamatives can be given in the following simplified form:

(15) Hány könyvet vettél meg?
'How many books did you buy?'
%H H+L* H%

(16) Hány könyvet vettél meg!
'You bought so many books!'
%L L+H* M%

The tonal description for wh-interrogatives based on this experiment is identical to the analysis given in Mycock (2010 : 284). Interestingly, the tonal pattern of wh-exclamatives is very different: here the first part of the sentence was perceived lower than the second part. At the same time, the phrase-final tone was only perceptually higher in exclamatives than in interrogatives, not in absolute terms. This perceptual difference is probably due to the low start of the sentence: sentence-final f0 is *relatively* higher in exclamatives than in interrogatives, as compared to the respective sentence-initial f0 values.

Hungarian wh-interrogatives have an intonation pattern that is very similar to that of declaratives with narrow focus: they contain a falling pitch accent on the focus and a low phrase-final boundary tone. As opposed to this unmarked pattern, the intonation pattern of exclamatives consists of a low phrase-initial tone, followed by a rising accent and a M% final boundary tone. To put it metaphorically, it seems as if the "culmination" of the utterance was delayed within the utterance.

Delayed f0 peaks are in fact supposed to be equivalent to higher peaks. As it is argued in Gussenhoven, listeners have a tacit knowledge about the fact that a higher pitch will take longer to reach than a lower one, thus, they interpret later peaks as more emphatic (2004 : 89ff). The fact that exclamatives included rising pitch accents in our material is in line with this statement. Either the rising pitch accent, ie an accent with a delayed peak, or the combination of the low initial boundary tone and the rising accent contribute to a stronger emphasis over the utterance as compared to interrogatives.

It is not clear at this point what the primarily distinctive cue between wh-interrogatives and wh-exclamatives is: the pitch accent type, the phrase-initial boundary tone or their combination. This issue will be investigated in further experiments.

REFERENCES

Altmann, Hans. 1987. Zur Problematik der Konstitution von Satzmodi als Form-typen. In: Jörg Meibauer (ed.), *Satzmodus zwischen Grammatik und Pragmatik.* Tübingen: Niemeyer. 22–56.

Altmann, Hans. 1993. Satzmodus. In: Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennemann (eds.), *Syntax.* Berlin: De Gruyter. 1006–1029.

Batliner, Anton. 1988. Der Exklamativ: mehr als Aussage oder doch nur mehr oder weniger Aussage? Experimente zur Rolle von Höhe und Position des F0-Gipfels. In Hans Altmann (ed.), *Intonationsforschungen.* Tübingen: Niemeyer. 243–271.

Batliner, Anton. 1989. Wieviel Halbtöne braucht die Frage? Merkmale, Dimensionen, Kategorien. In: Hans Altmann, Anton Batliner, and Wilhelm Oppenrieder (eds.), *Zur Intonation von Modus und Fokus im Deutschen.* Niemeyer: Tübingen. 111–162.

Brandt, Margareta, Marga Reis, Inger Rosengren, and Ilse Zimmerman. 1992. Satztyp, Satzmodus und Illokution. In: Inger Rosengren (ed.), *Satz und Illokution, vol. 1.* Tübingen: Niemeyer. 1–90.

É. Kiss, Katalin. 2002. *The Syntax of Hungarian.* Cambridge: Cambridge University Press.

Fónagy, Iván and Klára Magdics. 1967. *A magyar beszéd dallama.* Budapest: Akadémiai Kiadó.

Gussenhoven, Carlos. 2004. *The phonology of tone and intonation.* Cambridge: Cambridge University Press.

Gussenhoven, Carlos. 2005. Transcription of Dutch intonation. In: Sun-Ah Jun (ed.), *Prosodic typology.* Oxford: Oxford University Press. 118–145.

Kálmán, László. 2001. *Magyar leíró nyelvtan 1. Mondattan.* Budapest: Tinta Könyvkiadó.

Kálmán, László and Ádám Nádasdy. 1994. A hangsúly. In: Ferenc Kiefer (ed.), *Strukturális magyar nyelvtan 2: Fonológia.* Budapest: Akadémiai Kiadó. 393–467.

Károly, Sándor. 1964. A mondatfajták vizsgálata a funkció és a forma szempontjából. *Nyelvtudományi Közlemények* 66 : 67–88.

König, Ekkehard and Peter Siemund. 2007. Speech act distinctions in syntax. In: Timothy Shopen (ed.), *Language Typology and Syntactic Description, Vol. 1.* Cambridge: Cambridge University Press. 276–324.

Lipták, Anikó. 2006. Word order in Hungarian exclamatives. *Acta Linguistica Hungarica* 53 : 343–391.

Mády, Katalin. 2012. A fókusz prozódiai jelölése felolvasásban és spontán beszédben. In: Mária Gósy (ed.), *Beszéd, adatbázis, kutatások.* Budapest: Akadémiai Kiadó. 91–107.

Mycock, Louise. 2010. Prominence in Hungarian: the prosody–syntax connection. *Transactions of the Philological Society* 108/3 : 265–297.

Rosengren, Inger. 1992. Zur Grammatik und Pragmatik der Exklamation. In: Inger Rosengren (ed.), *Satz und Illokution, Band 1.* Tübingen: Niemeyer. 263–306.

Rosengren, Inger. 1994. Expressive sentence types — a contradiction in terms. The case of exclamation. *Sprache und Pragmatik* 33 : 38–68.

Sadock, Jerrold M. and Arnold M. Zwicky. 1985. Speech act distinctions in syntax. In: Timothy Shopen (ed.), *Language Typology and Syntactic Description.* Cambridge: Cambridge University Press. 155–196.

Silverman, Kim, Mary Beckman, John Pitrelli, Mari Ostendorf, Colin Wightman, Patti Price, Janet Pierrehumbert, and Julia Hirschberg. 1992. ToBI: a standard for labeling English prosody. In: John J. Ohala, Terrance N. Nearey, Bruce L. Derwing, Megan M. Hodge, and Grace E. Wiebe (eds.), *Proceedings of the 2nd International Conference on Spoken Language Processing. Vol. 2.* Banff, Alberta. 867–870.

Sorianello, Patrizia. 2012. A prosodic account of Italian exclamative sentences: a gating test. Paper presented at the Speech Prosody, 6th International Conference, Shanghai, 22–25 May 2012.

Szabolcsi, Anna. 1997. Strategies for Scope Taking. In: Anna Szabolcsi (ed.), *Ways of Scope Taking.* Amsterdam: Kluwer. 109–154.

Varga, László. 1982. Két szintaktikai pozícióról. *Magyar Nyelv* 78 : 150–169.

Varga, László. 2002. *Intonation and stress: evidence from Hungarian.* Basingstoke & New York: Palgrave Macmillan.

Beáta Gyuris and Katalin Mády
gyuris.beata@nytud.mta.hu
mady.katalin@nytud.mta.hu
Research Institute for Linguistics
Hungarian Academy of Sciences

The form and function of interrogatives: A corpus-based study of Hungarian questions

Alexandra Markó

Introduction

Questions are ubiquitous in everyday social interaction, therefore they have been investigated at every level of linguistic analysis for decades (Freed 1994). Research on the prosody, syntax, logic, semantics, pragmatics, psycholinguistic nature and conversational usefulness of questions can be found in a wide range of papers and books (see eg Austin 1962, Searle 1969, Schegloff & Sacks 1973, Hymes 1974, Fishman 1978, Kiefer 1983, Vion & Colas 2006). Although there is a general agreement that questions have an identifiable syntactic form, characteristic prosody, a semantic or propositional content which is separate from their pragmatic and social function and separate also from their various roles in conversational interaction, there is considerable disagreement about how questions should be defined, classified and analysed (for a review, see Freed 1994).

The interactional approach suggests that the analysis of questions should take into account the context in which they occur and the local situated interests of discourse participants, however the recognisability of questioning can be derived from purely formal linguistic features as well (eg syntax or intonation) (Rossano 2010). Freed (1994) posits a taxonomy illustrating how questions vary along an information continuum. Sixteen different functional categories are established, from public information (which are about the external world and request new factual information) to reported speech. In between, one can find such functions as social invitation (eg *Would you like some. . . ?*), clarification of information, repetition of information (eg *Pardon?*), phatic information (eg *You know what I mean?*), didactic, rhetorical function and so on. The 16 continual types of Freed (1994) correspond to four functional classes recognized by the previous literature, see for example Kearsley's overview of questions (1976).

The function and the form of questions show interrelations (see Freed 1994 among others).

Based on their logical semantic structure, three main question types are differentiated: (1) content questions (in English, they are often referred to as *wh-questions*), (2) polar questions (also known as *yes–no questions*) and (3) alternative questions.

Content questions are interrogative sentences that contain a question word such as *who* or *where,* and the focus of the expected answer belongs to the same ontological category as the question word (eg a person reference in response to 'who', a spatial reference in response to 'where'). Open questions are considered a special type or offshoot of wh-questions, with the same syntactic structure but different semantic features: they require longer exposition (not just one word) as an answer (eg *How can we solve this problem?*) (Kiefer 2000, Kugler 2000). In Hungarian prosody, both wh-questions proper and open questions feature a front falling contour (Deme 1962, Varga 2002a).

Polar questions require affirmation/confirmation or disconfirmation. Alternative question is considered the third main category (beside content and polar question) by several authors (eg Stivers 2010, Rossano 2010), while other scholars classify it as a subtype of polar question (Freed 1994, Kiefer 2000, Kugler 2000). In Hungarian, polar and alternative questions have quasi-identical syntactic structure (Kugler 2000), however in terms of prosody they are rather different (see Olaszy 2002, Varga 2002a).

Questions can be marked formally by lexical, morphological, syntactic or prosodic devices appropriate to the given language, however questions are sometimes produced without such marking and conversely, not all interrogative sentences which are characterized by the formal features of the category can be evaluated as "real questions" (requiring an answer) from an interactional perspective.

Hungarian content questions are lexically marked (question word). Polar questions can be marked by a question particle or a special (final rise-fall) intonation contour (the distribution of morpho-lexical and prosodic markers showing complementary distribution), as well as with a question tag. The obligatory marker of alternative questions is *vagy* 'or', and a complex prosodic structure (eg high monotone + fall, see Varga 2002a).

In 2010, a special issue of Journal of Pragmatics was dedicated to the pragmatics of questions and their responses in 10 languages (from Europe, the USA, Southeast Asia, Mexico, Namibia, and Papua New Guinea). Although the analysis was predominantly pragmatic in orientation, several other factors were also necessarily taken into consideration, including log-

ical semantic structure, morphosyntactic and prosodic characteristics. In the survey, approximately 350 question-answer pairs taken from informal conversations were analysed in each language.

In the Hungarian literature, there is an abundance of theoretical analyses of interrogatives in terms of semantics, syntax, pragmatics or prosody (see, eg Deme 1962, Fónagy 1998, Fábricz 1981, Kiefer 2000, Gósy & Terken 1994, Olaszy 2002, Varga 2002b). Nevertheless, research on questions as occurring in spontaneous speech is somewhat underrepresented. Fónagy & Magdics (1963, 1967) based their findings primarily on the intonation of questions in read and rehearsed by actors. Although spontaneous realizations are also mentioned in their work, these are sporadic, lacking a systematic analysis. Pragmatic studies on interrogatives in Hungarian have mostly focused on (semi)institutional debates (eg Schirm 2007).

In a previous study, I recorded a conversation involving four 21-year-old native speakers of Standard Hungarian (2 female and 2 male subjects). The length of the recording was nearly two hours, in which (after the exclusion of noisy occurrences affected by overlapped speech, laughter, etc) 199 questions were analysed in terms of the phonetic characteristics of intonation (Markó 2007). It was found that the intonation structure of spontaneous questions is much more diverse than that of read or rehearsed utterances as described in the literature. The conversation provided samples of numerous alternative realizations of phonological forms which had not been documented in earlier studies, and several questions arose with respect to the identification of the function of interrogatives.

In the present research, I have analysed informal conversations focusing on functional and logical semantic types as well as prosodic realizations. According to the hypotheses, (1) the assignment of conversational questions into logical semantic types depends on the function of the utterances involved (whether or not they require an answer), and (2) the prosodic realization of interrogative sentences depends on their function as well. Specifically, the occurrence of irregular or unexpected contours is more frequent among "non-real" interrogatives (which do not call for an answer) than among "real" ones.

Material and method

The material of the analysis reported here was selected from the BEA Hungarian speech database ("BEA" stands for ***be****szélt nyelvi* ***a****datbázis* 'spoken language data base'), recorded at the Research Institute for Linguistics of the Hungarian Academy of Sciences under constant circumstances in an anechoic chamber (www.nytud.hu/dbases/bea; for detailed technical pa-

rameters, see Gósy 2012). BEA's material consists of several speech samples from various types of spontaneous speech, interviews, repetitions of stimuli, reading aloud, and conversations. The subjects are monolingual native speakers from Budapest aged between 20 and 90 years.

For the present research, 30 conversations were selected from BEA. In the conversation module of the database, there are three participants: the subject, the interviewer, and a third person. The topics vary, but invariably concern everyday life. Some conversation topics are: Easter, marriage vs cohabitation, secondary school final exams, summer holidays, school violence, keeping pets in an apartment, legalization of light drugs, theatrical life, students' rights, women's careers, the value of a university degree, etc. Topics for the conversation module are selected by the interviewer in accordance with the subject's age, job, and area of interest (based on the interview module).

The 15 female and 15 male subjects were selected on the basis of age from three age groups, see table 1. Since the distribution of the informants' age is not completely balanced in the BEA database, the range of age is not necessarily identical in the age groups of female and male subjects.

table 1: The distribution of subjects in terms of sex and age (in years)

	Female subjects		Male subjects	
	Range	Average	Range	Average
Young	21–24	22.2	21–24	22.0
Middle-aged	39–46	43.6	39–42	40.0
Elderly	54–60	57.4	57–66	61.0

The total duration of the 30 conversations exceeds 10 hours. Of this, the subjects' speech amounts to 290.5 minutes (ie approximately 5 hours). The duration of conversation recordings ranges between 6 minutes 42 seconds and 73 minutes 26 seconds, the average being 20 minutes 50 seconds. The subjects' speaking time was measured between 2 minutes 38 seconds and 45 minutes 12 seconds, with an average of 9 minutes 42 seconds.

Questions were identified in each recording. Because of the special background of BEA recordings (the interviewer and the third participant in all 30 conversations are from the same 4 persons developing the database, so their speech is overrepresented), only the questions asked by the subjects were taken into account in the analysis. Those which were suitable for a complex analysis (ie those not affected by overlapping speech, laughter or any other noise) were categorized according to the following criteria:

(1) logical semantic structure (polar, content or alternative); (2) function (whether the question requires an answer or it has a different function); (3) prosody (phonologically regular or not).

The context that preceded and followed each question was considered in the functional classification of interrogative sentences. With respect to logical semantic structure, first the total corpus of questions was analysed. In a next step, the functional and the formal approach were combined, and a logical sematic classification was carried out separately for the "real" questions (which require an answer) and the "non-real" ones. In the functional analysis, the method introduced by Stivers & Enfield (2010) was followed.

Results

In the approximately 5 hours of the analyzed speech material of 30 subjects, a total of 134 (not noisy) question tokens were labelled. On average, this means that the subjects uttered an interrogative in every 2.2 minutes. Naturally, there were some subjects (9 in total) who did not ask a question at all in the entire conversation, while a young man used 31 interrogative sentences (in 90 minutes of speech), and 20 interrogatives were found in an older man's speech material (which lasted more than 30 minutes). As a general rule, no correlation can be found between speech duration and the number of interrogatives. For example, some speakers failed to use any questions despite talking for more than 30 minutes. The average number of interrogatives was 4.5 per person.

Regarding the logical semantic characteristics of the analyzed interrogative sentences, the two main types are represented nearly equally. The ratio of content questions is 45.52% (61 occurrences), the ratio of yes–no questions is 52.24% (70 tokens), and 3 alternative questions also occurred (2.24%).

The normative implications of questions (ie the occurrence of a response) are interactional in nature and pertain to the sequential organization of social action and its accountability (Rossano 2010). From this interactional point of view, a rather numerous group of interrogatives was evaluated as "non-real" in the present material. In these cases, the interlocutor does not expect an answer. The number of these interrogatives was 56, accounting for 42.42% of the total amount of tokens. This ratio seems to be relatively large, therefore I compared it to the data reported in the literature. A corpus of American English questions (1275 tokens) collected from dyadic conversations was analysed by Freed (1994). In her data, so-called relational and expressive questions have a share of 51.69%. In an-

other study of American English, informal social interactions were video-recorded in familiar settings with 3 to 5 speakers. In this corpus of 350 interrogatives, 6.29% of the questions were "non-functional", in the sense of apparently not carrying any expectation of a response (Stivers 2010). Japanese interactions (informal, spontaneous conversations among 3–4 adult friends and/or family members) examined by the same project contained 8.57% "non-functional" questions in a sample of 350 (Hayashi 2010). These data suggest that the ratio of questions not requiring an answer can be influenced by the interaction's style in terms of the formal-informal scale, and other factors such as the topic of the conversation.

In the corpus under investigation, almost half of the "non-real" occurrences (49.09%, 27 tokens) belonged to reported speech, where the question contained information from an entirely different (past or hypothetical) speech event. 19 questions (33.93% of the "non-real" category) had a rhetorical function, 7 tokens (12.50%) were realized as phatic parenthesises (eg *tudod?* 'you know?'). 3 questions (5.36%) expressed the uncertainty of the speaker, where the speaker was aware that the hearer did not know the answer for the question, but (s)he was not confident of the content of her/his utterance (see B's answer in the following sequence, uttered with the intonation contour of yes–no questions: A: *Hány óra volt az út?* 'How many hours did the trip take?' B: *Hát olyan tizenkettő?* 'Well, about twelve?')

In 78 cases (57.58% of the total corpus), the question was followed by a (verbal or non-verbal) answer. The logical semantic classes of these "real" interrogatives show completely different ratios compared to the whole material, and compared to "non-real" questions, too (figure 1). The ratio of polar questions is overrepresented among the "real" questions at 65.38% (51 tokens), with content question only accounting for 32.05% (25 tokens), and alternative questions 2.56% (2 tokens). The 56 occurrences of "non-real" questions include 33.93% polar (19 tokens), 64.29% content (36 tokens) and 1.79% alternative questions (1 token).

For the sake of comparison, it is worth noting the data of a similar analysis of questions in other languages published in the special issue of Journal of Pragmatics (2010). Even though the cited studies only used data from maximally informal social interaction in familiar settings between people who knew each other well (Enfield et al. 2010), and the recordings of the Hungarian BEA database are more or less staged, the comparison of the raw results can be fruitful (figure 2). The distribution of logical semantic types in "real" questions is quite similar in the conversations of various languages, which may suggest that this distribution is universal.

figure 1: The logical semantic distribution of "real" and "non-real" questions in the corpus

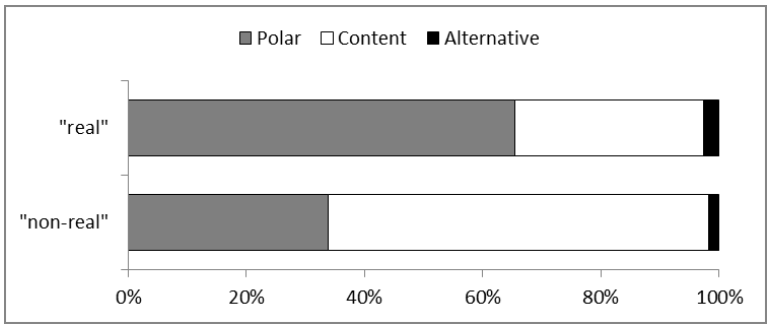
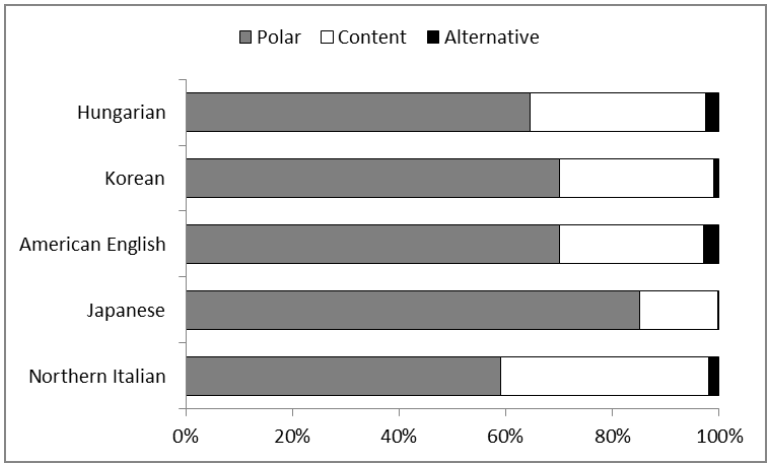


figure 2: Distribution of polar, content and alternative ("real") questions in Hungarian (present research), Korean (Yoon 2010), American English (Stivers 2010), Japanese (Hayashi 2010) and Northern Italian (Rossano 2010) conversations



The prosodic analysis was only carried out on 125 interrogatives, since 5 content questions were realized with glottalization (4) or breathy voice (1), and 4 further tokens (3 polar and 1 content) were excluded because of their attitudinal characteristics (expression of disappointment). First the frequency ratio of regular prosodic structure was defined both for the overall data sample and specifically for "real" and "non-real" questions as well as for each logical semantic type. It should be noted that when the prosody differed in an expected manner because of a special function of the question, occurrences were regarded as regular. For example, echo questions are identical with content questions in their syntactic structure, but their intonation contour is characterized by a final fall-rise. With respect to Hun-

garian content questions, there is an ongoing debate on a relatively frequent intonation variant, namely the fall-rise, the question being whether it can be accepted as a regular form or not (for a review, see, eg Gósy 1993, Olaszy 2002). Since in the phonological description of Hungarian intonation (Varga 2002a), it is considered a variant of the basic form (with the special function of expressing conflict), in the present analysis I also adhere to this classification.

The numbers and ratios can be seen in table 2. The data do not show significant differences between "real" and "non-real" questions in terms of regularity of prosody, but polar "real" questions tend to be somewhat more regular than "non-real" ones. In the case of "non-real" questions, unexpected prosodic variations are more frequent among polar questions.

table 2: Ratio of regular prosodic structure in the various functional and formal types of questions (A = number of tokens, B = number (and ratio) of tokens with regular prosody)

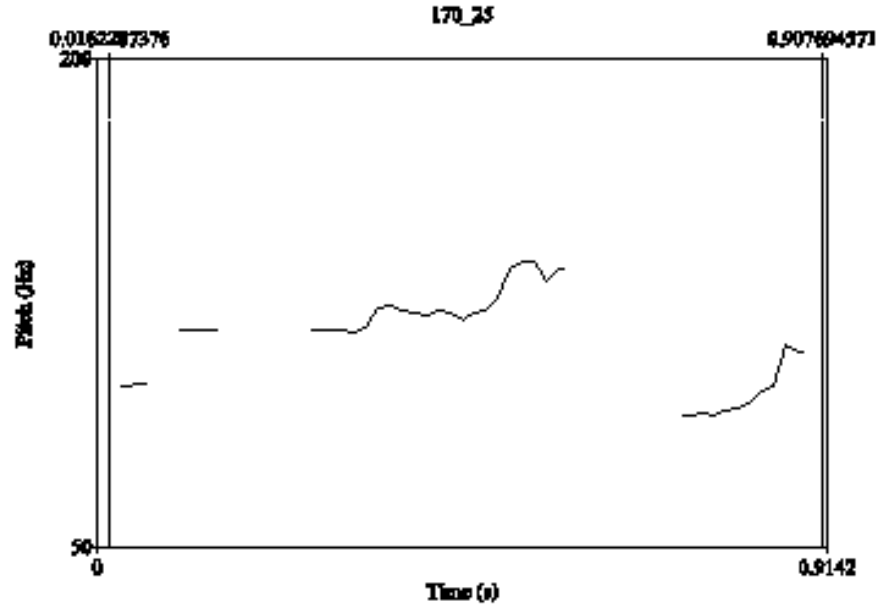
		Content	Polar	Alternative	Total
"Real" questions	A	24	49	2	75
	B	19 (79.17%)	39 (79.59%)	1 (50.00%)	59 (78.67%)
"Non-real" questions	A	31	18	1	50
	B	23 (74.19%)	12 (66.67%)	1 (100.00%)	36 (72.00%)
All questions	A	55	67	3	125
	B	42 (76.36%)	51 (76.12%)	2 (66.67%)	96 (76.80%)

As was mentioned above, 3 questions were found in the corpus which expressed the uncertainty of the speaker. In terms of formal characteristics, one of them belonged to polar questions, realized with (regular) final rise-fall, while two of them were content questions with the intonation contour of echo questions, that is the same final rise-fall. Furthermore, 3 rhetorical (therefore formally content) questions were documented with final rise-fall as well (eg *Miről beszélünk?* 'What we are talking about?'). These results suggest that, reflecting a special intention on behalf of the speaker, content questions can be realized with the intonation contour of polar questions, so this possibility is not limited to echo or repetitive questions.

The polar questions realized with an intonation contour different from the expected final rise-fall showed mainly the same variants as in Markó (2007). In one third of the cases, the rise-fall contour was followed by another rise (or after the rise the f0 stayed high). In a similar proportion of tokens, instead of a rise, a high monotone plateau was followed by a fall (which was not motivated by a peculiar attitude). In several other cases,

the position of the f0-peak was shifted from the penultimate syllable to a previous one, and this was also occasionally combined with a final rise (see figure 3).

figure 3: Pitch of the polar question Ez is már rögzítve van? *'Is this already being recorded?' with two peaks*

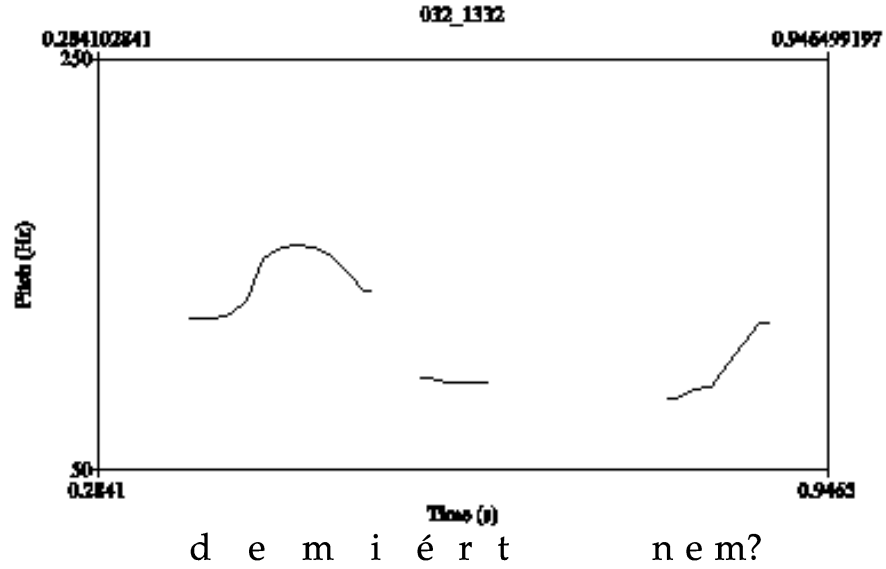


Although this subtype is considered to be frequent, not more than 8 of the content questions ended by a final rise. Despite what conventional wisdom and some remarks in the literature might suggest, this form was documented in men's speech with only one exception (see figure 4).

Conclusions

The analysis reported here focused on the functional and logical semantic types of interrogative sentences and their prosodic realizations in 30 conversations of the BEA speech database. Based on conversational data from five languages, it was found that the distribution of logical semantic types does not depend on the language, with polar questions rated the most frequent by all of the cited studies. At the same time, there may be correlations between the interaction's level of formality and the distribution of polar and content questions (Kearsley 1976). In the cited studies as

figure 4: Pitch of the content question De miért nem? *'But why not?' with final rise from a male speaker's sample (the break of continuity in the f0-curve between* i *and* é *is caused by irregularity of voice)*



well as in the present research, the analysed conversations were more or less informal, which may partially account for the similar results.

It was presumed that the distribution of logical semantic types of questions in conversations would depend on the function of the interrogative sentence (whether it required an answer or not). This hypothesis has been confirmed: the ratio of content and polar questions is exactly the opposite among "real" and "non-real" questions. This result can be the consequence of pragmatic characteristics of the two groups of questions. Probably in a more informal situation, in which the social distance between the interlocutors is low, "real" questions are more frequent, and — as we have seen — among them polar questions are predominant.

The prosodic realization of interrogative sentences was assumed to depend on their function. It was found that the occurrences of irregular or unexpected contours were more frequent among "non-real" questions than among "real" ones, but this difference was considerable only in the group of polar questions. This result may be explained by the fact that in the case of "real" polar questions (lacking any other marker) the identifiable intonation contour is a very important cue for perception.

The analysis of spontaneous Hungarian questions suggests that in approximately 20–30% of the occurrences (after excluding irregular tokens,

eg those affected by speaker emotion), the intonation of questions does not support the findings of the literature. Some alternative realizations can probably be explained by pragmatic factors which were not taken into account in previous studies to a sufficient degree. The results raise the question whether the unexpected prosodic realizations are indeed irregular, or they should be evaluated as variants of the phonologically defined contour. There is reason to believe that just as the fall-rise contour of content questions has been accepted as a regular variant in the wake of recent research, the further analysis of spontaneous speech and various realizations of Hungarian questions may render our knowledge of interrogative functions and their mapping to intonation forms more precise.

REFERENCES

Austin, John L. 1962. *How to Do Things with Words.* Cambridge, MA: Harvard University Press.

Deme, László. 1962. Hangsúly, szórend, hanglejtés, szünet. [Stress, word order, intonation, pause]. In: József Tompa (ed.), *A mai magyar nyelv rendszere. Leíró nyelvtan II.* [The system of present-day Hungarian. Descriptive grammar, vol. 2.]. Budapest: Akadémiai Kiadó. 457–522.

Enfield, N. J., Tanya Stivers, and Stephen C. Levinson. 2010. Question–response sequences in conversation across ten languages: An introduction. *Journal of Pragmatics* 42 : 2615–2619.

Fábricz, Károly. 1981. Az *-e* kérdő partikula. [The *-e* question particle]. *Magyar Nyelvőr* 105 : 447–451.

Fishman, Pamela. 1978. Interaction: The work women do. *Social Problems* 25 : 397–406.

Fónagy, Iván. 1998. Intonation in Hungarian. In: Daniel Hirst and Albert di Cristo (eds.), *Intonation Systems. A Survey of Twenty Languages.* Cambridge: Cambridge University Press. 328–344.

Fónagy, Iván and Klára Magdics. 1963. A kérdő mondatok dallamáról. [On the intonation of interrogative sentences]. *Nyelvtudományi Értekezések* 40 : 89–106.

Fónagy, Iván and Klára Magdics. 1967. *A magyar beszéd dallama.* [The intonation of Hungarian speech]. Budapest: Akadémiai Kiadó.

Freed, Alice F. 1994. The form and function of questions in informal dyadic conversation. *Journal of Pragmatics* 21 : 621–644.

Gósy, Mária. 1993. A kiegészítendő kérdés dallamváltozása. [Change of intonation in content questions]. *Magyar Nyelvőr* 117 : 443–447.

Gósy, Mária. 2012. BEA — A multifunctional Hungarian spoken language database. *The Phonetician* 105/106 : 50–61.

Gósy, Mária and Jacques Terken. 1994. Question marking in Hungarian: timing and height of pitch peaks. *Journal of Phonetics* 22 : 269–281.

Hayashi, Makoto. 2010. An overview of the question–response system in Japanese. *Journal of Pragmatics* 42 : 2685–2702.

Hymes, Dell. 1974. *Foundations in Sociolinguistics.* Philadelphia, PA: University of Pennsylvania Press.

Kearsley, Greg. 1976. Questions and question-asking in verbal discourse: A cross-disciplinary review. *Journal of Psycholinguistic Research* 5/4 : 355–375.

Kiefer, Ferenc. 2000. *Jelentéselmélet.* [Semantic Theory] Budapest: Corvina.

Kiefer, Ferenc (ed.). 1983. *Questions and Answers.* Dordrecht & Boston: Reidel.

Kugler, Nóra. 2000. A mondattan általános kérdései. [General issues of syntax]. In: Borbála Keszler (ed.), *Magyar grammatika.* [Hungarian Grammar]. Budapest: Nemzeti Tankönyvkiadó. 369–393.

Markó, Alexandra. 2007. Kérdő funkciójú hanglejtésformák a spontán beszédben. [Intonation contours with interrogative function in spontaneous speech]. *Beszédkutatás 2007*: 59–74.

Olaszy, Gábor. 2002. A magyar kérdés dallamformáinak és intenzitásszerkezetének fonetikai vizsgálata. [A phonetic analysis of the intonation and intensity structure of Hungarian questions]. *Beszédkutatás 2002*: 83–99.

Rossano, Federico. 2010. Questioning and responding in Italian. *Journal of Pragmatics* 42 : 2756–2771.

Schegloff, Emmanuel and Harvey Sacks. 1973. Opening up closings. *Semiotica* 7/4 : 289–327.

Schirm, Anita. 2007. A kérdések pragmatikája [Pragmatics of questions]. In: Váradi, Tamás (ed.), *Alknyelvdok I. Alkalmazott Nyelvészeti Doktorandusz Konferencia* [1st Congress of Doctoral Students in Applied Linguistics]. Budapest: MTA Nyelvtudományi Intézet. 161–171. Retrieved on 2013-02-19 from www.nytud.hu/alknyelvdok07/proceedings07/Schirm.pdf.

Searle, John. 1969. *Speech Acts: An Essay in the Philosophy of Language.* Cambridge: Cambridge University Press.

Stivers, Tanya. 2010. An overview of the question–response system in American English conversation. *Journal of Pragmatics* 42 : 2772–2781.

Stivers, Tanya and N. J. Enfield. 2010. A coding scheme for question–response sequences in conversation. *Journal of Pragmatics* 42 : 2620–2626.

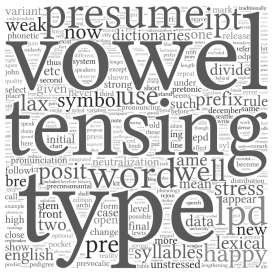
Varga, László. 2002a. *Intonation and Stress. Evidence from Hungarian.* Houndmills, Basingstoke: Palgrave Macmillan.

Varga, László. 2002b. The intonation of monosyllabic Hungarian yes-no questions. *Acta Linguistica Hungarica* 49 : 307–320.

Vion, Monique and Annie Colas. 2006. Pitch cues for the recognition of Yes-No questions in French. *Journal of Psycholinguistic Research* 35 : 427–445.

Yoon, Kyung-Eun. 2010. Questions and responses in Korean conversation. *Journal of Pragmatics* 42 : 2782–2798.

Alexandra Markó
marko.alexandra@btk.elte.hu
Eötvös Loránd University
Budapest



"PRESUME-tensing" and the status of weak /i/ in RP

Ádám Nádasdy

This study[1] deals with a recent development in the pronunciation of Standard Southern British English (SSBE or RP), as observed and recorded by John Wells in the third edition of his *Longman Pronunciation Dictionary* (LPD3, 2008). The high front vowel in initial pretonic open syllables like *presume, release, December* is given with /ri-, pri-, di-/ instead of the previously recorded /rɪ-, prɪ-, dɪ-/. I shall call this phenomenon "PRESUME-tensing". Several things have to be considered: the phonetic value of the symbol /i/, the possible reason for this alleged change in pronunciation, and its significance for the phonology of English.

LPD3 data: the "new system"

Let us quote what Wells says in the Foreword to the third edition:

(1) Entries for words containing *be-, de-, e-, pre-, re-* and *se-* (also *rede-, unre-* etc) have been simplified. When unstressed, these prefixes are now shown with /i/. This reflects the fact that, like words ending in /i/, such as *happy*, they may be pronounced indifferently with /ɪ/ or /iː/. (These prefixes also have variants with /ə/, shown explicitly.) (2008: xiii)

The expression "when unstressed" excludes independent prefixes (meaningful productive morphemes added at word level), such as *de#magnetize, re#write,* as well as integrated prefixes (meaningless unproductive morphemes present at lexical level, usually attached to bound stems) if

[1] I am grateful to Péter Szigetvári for calling my attention to this development.

they become stressed due to some stress assignment rule, eg *dé+monstrate, rè+pre+sent* (Nádasdy 1994, 2006). Our examination, then, refers to unstressed integrated prefixes. The table in (2) presents some relevant data from LPD3. Only preconsonantal data are listed, since in prevocalic position (as in *react*) the rule of HAPPY-tensing produces /i/ anyway. The words listed are all given with /ə/ as a second possibility (which actually counts as third, since the notation /i/ includes the variant /ɪ/).

(2) *Data for PRESUME-tensing in LPD3, having /i/ (/ə/) in preconsonantal position*

	be-	de-	e-	pre-	re-	se-
_CV	because beyond believe	December decide determine	enamel enormous emancipate	prefer presume preliminary	release rejoice respond	
_.CC	begrudge bestrew between	decline (v) destroy	equality equate	prescribe preclude	refresh respond restrict	
_RV	bereave	derive derange derogatory		prerogative	—	

All dictionaries have inconsistencies, and the LPD3, excellent as it is, is no exception. In the Foreword (quoted above) Wells includes *se-* among those to be given with /i/, but in the body of the dictionary there is no trace of this: all *se-* words continue to appear with /sɪ-/ or /sə-/ (with the regular exception of *Seattle* /si-/, where the prevocalic position triggers HAPPY-tensing). In the "Language Panel" on Weak vowels (2008 : 892) Wells illustrates /i/ with only the word *happy,* while *seductive* is given with /ɪ/; here *remember* is also given with /ɪ/ only, though in the dictionary it is /i/ (/ə/). In a review of LPD3, Windsor Lewis writes: "Among the changes to LPD are some to words with the prefixes **be-, de-, e-, re-** and **se-** so that, when unstressed, these are now usually shown with the cover symbol **i** standing for 'pronounced indifferently with /ɪ/ or /iː/' (p. xiii). These are rightly not completely blanket changes as can be seen by comparing, eg *event* /ɪ (ə)/ with *select* /ə (ɪ)/, and *recast* /iː/ with *revise* /i (ə)/. The choice of [i] rather than [ɪ] or [ə] in respect of some common words, eg *believe* and *remind,* may not meet with universal assent" (2009 : 238).

The symbol /i/

The short /i/ symbol was introduced by Wells in LPD1 (1990). The notation /i/ means, in his definition, that /iː/ and /ɪ/ are equally possible in

the given place. He named the phenomenon HAPPY-tensing in *Accents of English* (1982). This name, aptly, does not say "lengthening", as the change means the raising and fronting (= tensing) of the vowel so that it will approach, or reach, cardinal [i]—but not necessarily a lengthening to [iː]. The following comment from Wells supports this, as he speaks of a tense /i/, not a long /iː/.

(3) Like many other phoneticians of English, for the past twenty-odd years I have been using the symbol **i** to represent the weak 'happY' vowel used in positions where the FLEECE–KIT distinction, **iː** vs **ɪ**, is neutralized, and where an older generation of RP speakers used a lax [**ɪ**] but a younger generation tend to prefer a tense [**i**] (Wells 2012)

In the Introduction to the 14th edition of *Everyman's Pronouncing Dictionary* (EPD14), Gimson remarked: "There is a tendency among young RP speakers to use a closer variant, near to the quality of /iː/, in a final position, eg in a word such as 'happy"' (Jones 1977: xvi). When these authors refer to /iː/ as the new variant, they apparently mean an [i] quality, not an [iː] length, but since they work in the taxonomic tradition, they feel it necessary to refer to existing English phonemes, members of the segment inventory: this is why they mention "the quality of /iː/"—which does not mean that the HAPPY-vowel is long. By the end of the twentieth century the tense vowel had made its way into RP. The young speakers of 1977 have now become middle-aged, and the /ɪ/ variant now counts as old-fashioned, as stated by Trudgill: "there is now some evidence that HAPPY-tensing is, or at least is going to be, a feature of RP. [. . .] HAPPY-tensing will now no longer be a regional feature, though absence of HAPPY-tensing will be" (2002 : 175).

Sometimes the authors cited speak of /i/ as a neutralization of /ɪ/ and /iː/. It is possible in phonology to use a third symbol (an "archi-symbol") to show that two segments are neutralized in a given position. It seems that originally Wells intended /i/ as such a symbol, to mean "either /ɪ/ or /iː/". An archi-symbol has no pronunciation; it is a descriptive abbreviation, the expression of a generalization, and cannot be thought of as a phonetic symbol. We may, for example, use the archi-symbol /N/ for pre-stop nasals, expressing the neutralization of /n/, /m/, /ŋ/ in such position *(hiNt, nuNber, iNk).* But we could not say that "the symbol /N/ is neither /n/ nor /m/ nor /ŋ/ but a quality different from all these". Now, it seems that /i/—at least today—is not an archi-symbol but a true phonetic symbol, representing the sound [i], because that is what most RP speakers say. In other words, /i/ is not (or not any longer) a neutralization symbol

but a proper phonetic symbol. Observe that Wells calls it "a tense vowel like /iː/":

(4) The symbol **i** does not mean "neither long nor short". It means that RP traditionally has lax **ɪ** in these positions, but that many speakers nowadays use a tense vowel like **iː**. In LPD I use the symbol **i** in those cases where some people have a tense vowel in place of the traditional RP lax vowel: [. . .] in the unstressed prefixes *be-, de-, pre-, re-,* and certain word-like combining forms such as *poly-* (Wells 2012)

When explaining neutralization in another section of LPD3, Wells repeats his claim that the symbol /i/ (like its counterpart /u/) is used in LPD to explicitly symbolize one type of neutralization: that between /iː/ *green* and /ɪ/ *grin* in non-preconsonantal positions (2008 : 539). He goes on to say: "In these positions the vowel is traditionally identified with /ɪ/. But in fact some speakers use /ɪ/, some use /iː/, some use something intermediate or indeterminate, and some fluctuate between the two possibilities" (ibid). This amounts to recognizing that /i/ is a phonetic entity, a short, tense, close front vowel. Its shortness naturally follows from its unstressed position; any lengthening that may affect it is irrelevant, since length is only a concomitant feature of certain English vowels. Actually, Wells's treatment of /i/ is similar to that of /ə/. English /ə/ is a real phonetic entity, [ə], with its place of articulation shown in the vowel trapeze (LPD3: xxv) as an ellipsoid patch in the central area. Similarly, /i/ appears as another ellipsoid patch in the high front area. This also suggests that /i/ is not an abbreviatory convention but a vowel.

In a section entitled 'Changes Well-established', Cruttenden speaks about "Final /ɪ/ replaced by /iː/ in words like *city*. [. . .] Recent editions of pronouncing dictionaries transcribe this with /i/ without the length marks, presumably to indicate that this final unaccented /i/ is often shorter than /iː/ elsewhere. [. . .] In a phonemic analysis this final vowel could be ascribed either to /iː/ or to /ɪ/ or regarded as a neutralized form" (2001 : 82).

Let us compare the strategy of some pronouncing dictionaries concerning /i/ and similar vowels. Cruttenden remarks, "The latest editions of standard pronouncing dictionaries transcribe [final unaccented vowels like *city*] with [i] and thus avoid equating it either with /ɪ/ or /iː/" (2001 : 107). Interestingly, the ODP (Upton et al. 2001), which is the most radically innovating of the current pronouncing dictionaries (witness its treatment of AmE flapping as underlying /d/, so *city* /sɪdi/) does not indicate PRESUME-tensing: it uses /ɪ/ in all such cases.

(5) *Various high front vowels in dictionaries*

The symbol /i/ for the HAPPY-vowel appears in boldface; sounds given by the dictionaries as second variants appear in brackets. Windsor Lewis's /i/ includes /i/ and /iː/, cf his *seedy, Hindi.*

	Jones EPD13 1967	Gimson EPD14 1977	W.Lewis WL 1972	Upton ODP 2001	Roach EPD16 2003	Wells LPD3 2008
city	i—i	ɪ—ɪ	ɪ—ɪ	ɪ—**i**	ɪ—**i**	ɪ—**i**
seedy	iː—i	iː—ɪ	i—ɪ	iː—**i**	iː—**i**	iː—**i**
bigotry	i—i	ɪ—ɪ	ɪ—ɪ	ɪ—**i**	ɪ—**i**	ɪ—**i**
Hindi	i—iː	ɪ—iː	ɪ—i	ɪ—**i** (iː)	ɪ—iː (**i**)	ɪ—**i** (iː)
pedigree	i—iː	ɪ—iː	ɪ—i	ɪ (ə)—iː	ɪ (ə)—iː	ɪ (ə)—iː
Seattle	i	ɪ	—	ɪ	**i**	**i**
reality	i (iː)	ɪ (iː)	i	ɪ	**i**	**i**
presume	i (ə)	ɪ (ə)	ɪ	ɪ (ə)	ɪ (ə)	**i** (ə)
December	i (iː)	ɪ (iː)	ɪ	ɪ (ə)	ɪ (ə)	**i** (ə)

The table shows that when the vowel is strong (ie there is some stress), /iː/ and /i/ are not neutralized but continue to contrast. Consider *pedigree* /ˈpedɪgriː/, where only /-iː/ is given in all sources. This word has a 103 stress structure, like *parachute* /ˈpærəʃuːt/ or *Levantine* /ˈlevəntiːn/, so the syllable *-gree* is not weak, and the whole question is void. (Compare *bigotry* /ˈbɪgətri/, with a weak final syllable, stress structure 100.) *Hindi* is more interesting: it appears to have two variant stressings, 10 /ˈhɪndi/ (or old-fashioned /ˈhɪndɪ/), and 13 /ˈhɪndiː/, like *centaur* /ˈsentɔː/ or *colleague* /ˈkɒliːg/.

HAPPY-tensing vs PRESUME-tensing

The change under examination, from /ɪ/ to /i/ in *release, presume, December,* is, then, a case of tensing. Its phonetic content is the same as that of HAPPY-tensing; however, it is now extended to preconsonantal positions. In the earlier system /i/ and /ɪ/ were in complementary distribution in weak syllables, so /i/ could be regarded as an allophone of weak /ɪ/, as shown by the dotted line in (6).

(6) *Distribution of high front vowels in the earlier system*

		strong		weak	
		/iː/	/ɪ/	/ɪ/	/i/
preconsonantal	_C	heat	hit	rabbit	—
non-preconsonantal	_V	neon	—	—	react
	_#	sea			happy

If Wells's new data are right — and we assume this to be the case — this means a restructuring of the system, since now /i/ appears before consonants as well *(release, presume, December),* so its distribution overlaps with that of /ɪ/: the two are no longer allophones. There are quasi-minimal pairs like *divide* /dɪ-/ vs *devise* /di-/. The new system of LPD3 looks like this:

(7) *Distribution of high front vowels in the new system*

		strong		weak	
		/iː/	/ɪ/	/ɪ/	/i/
preconsonantal	_C	heat	hit	rabbit	**presume**
non-preconsonantal	_V	neon	—	—	react
	_#	sea			happy

The appearance of preconsonantal /i/ is still very restricted: it appears only in syllables that are (or look like) morphemes, namely the integrated prefixes *be-, de-, e-, pre-, re-.* (It is worth noting that the new lexical /i/ practically always coincides with orthographic ⟨e⟩.) The most striking example for this is *December,* where there is obviously no morpheme boundary of any kind. It seems that — according to Wells — the tensing may affect these elements even when they stand elsewhere in the word. Consider some data from LPD3:

(8) i (ə): repr**e**hend, repr**e**sent, repr**i**mand, unb**e**knownst, unb**e**coming, unr**e**strained
ɪ (ə): appr**e**hend, compr**e**hend
ə (ɪ): der**e**lict, depr**e**cate

It is important that *be-, de-, pre-, re-,* have homograph pairs used as independent prefixes, with /iː/ as their vowel, eg *befriend, demagnetize, prepay, rewrite.* The element *se-* (in spite of Wells's original plan) is not affected, but the absence of /si-/ is not surprising, as *se-* is the least prefix-like of the

word-beginnings, having no corresponding independent prefix. Though its Latin original is a prefix (Latin *sē-* 'apart'), such English words as *secede* or *separate* are more opaque synchronically than, say, *repeat* or *prefer.* On the other hand, the element *e-* is affected, but presumably because it is word-initial (not just in the initial syllable), and therefore prone to Initial Pretonic Tensing anyway.

The new /i/ pronunciation of the unstressed integrated prefixes may lead to the blurring of the integrated/independent distinction. Compare LPD3's two entries for *rejoin*:

(9) a. *rejoin* 'reply, add' re+jóin /riˈʤɔɪn/, (/rə-/)
b. *rejoin* 'join again' rè#jóin /ˌriːˈʤɔɪn/

Normally, in (9b) the stress (and the concomitant length) will mark the prefix as independent and meaningful. But in the new system the vowel quality in (9a) is the same, and given faster speech and Rhythmic Stress-Deletion, *re+* and *re#* may well become homophonous, as in *didn't rejoin.* This homophony, however, does not point towards the independent prefixes "sinking" to the integrated level; on the contrary, it seems that the integrated prefixes are "rising" to the independent level, as their vowel is no longer sensitive to the following segment. Such an arrangement would suggest a "strong" (or word) boundary, so *be#reave,* etc. But this is falsified by the bound stem *—reave.* We thus witness a false re-morphologization of these prefixes, a re-analysis of "prefix+stem" to "prefix#stem".

Tense /i/ before /r/

In the new system a tense vowel, /i/, can freely appear before /r/ without Pre-R Breaking (ie laxing and/or diphthongization with an /ə/-offglide) taking place, eg *bereave, derive.* This can be explained in two ways. We might posit a strong boundary between prefix and stem, thus *be#reave, de#rive.* As Pre-R Breaking is a word-level rule, the strong boundary disables it, just like in *keyring, showroom,* etc. This solution would work from the phonological point of view, but cause difficulties in the morphology: only a free stem can stand after the # boundary, as in *de#magnetize, re#write, pre#existence.* If we blur the distinction between, say, *pre+sume* and *pre#set,* we shall not be able to distinguish *re+join* from *re#join,* or *re+creation* /rɛ-/ from *re#creation* /riː-/. Furthermore, this solution would be absurd for *De#cember.*

The other possibility is to relax the phonotactic constraint that high vowels cannot stand before /ɪ/, and maintain its validity only in strong (= stressed) syllables. Accordingly, *hero* cannot be /-iːɪ-/ and must be /-ɪə-/ (or /-ɪːɪ/), but *derive* can be /-ɪ-/ because it is in a weak syllable. This seems to be the better solution, especially because cross-linguistically stressed (strong) positions are often more constrained or specified than weak positions.

Initial-Pretonic Tensing

Unstressed open syllables are generally weak in English, eg *lem**o**nade, jeal**ou**sy, ev**i**dence, pol**y**thene, Par**a**dise.* However, in word-initial syllables (which *a fortiori* must be followed by a major-stressed syllable, since no word begins with two unstressed syllables) an unstressed syllable may be "strengthened", that is, it may have its full (or "strong") pronunciation, which is normally a tense (long or diphthongal) quality since the syllable is open (unchecked): *d**i**rector* /aɪ/, *v**a**cation* /eɪ/, etc. This initial-pretonic tensing is not a predictable regularity: there are lexical exceptions to it, where only /ə/ is given: *propose, domestic, variety, Jamaica,* etc. The tensing tendency is restricted to syllables which are both pretonic and open: a recent acoustic study has shown that in -ES and -ED suffixes, that is, typical posttonic closed weak syllables with /ɪ/, there is no sign of change in the speech of young RP speakers (Fabricius 2002). Observe the varying degree and incidence of Initial-Pretonic Tensing in the examples in appendix 2.

Initial-pretonic tensing is more widespread in American English. For example, *pilaster* with /paɪ-/ is only recorded for AmE, and *probation* /prəʊ-/ is the second pronunciation in BrE but the only one in AmE. Thus the whole change which we call PRESUME-tensing might be thought of as an AmE influence on BrE, though it is unusual for one variety to influence another at the level of phonology. Observe some data from current dictionaries for BrE and AmE. Note the homographs *release* 'let go' vs *release* 'lease again'.

(10)

	Upton ODP 2001		Roach EPD16 2003		Wells LPD3 2008	
	BrE	AmE	BrE	AmE	BrE	AmE
pr**e**sume	ɪ (ə)	**i** (ə)	ɪ (ə)	ɪ (**iː**)	**i** (ə)	**i** (ə)
D**e**cember	ɪ (ə)	ə (**i**)	ɪ (ə)	ɪ	**i** (ə)	**i** (ə)
r**e**lease	ɪ (ə)	ə (**i**)	ɪ (ə)	ɪ (ə)	**i** (ə)	**i** (ə)
r**e**#lease	**iː**	**i**	—	—	—	—

As can be seen, the ODP, which never marks PRESUME-tensing for BrE, does so for AmE, using the very same symbol /i/ in *presume* (first variant), *December* and *release* (second variant) as for the independent prefix in *re#lease.* EPD16 has /iː/ as a second alternant in *presume,* and no /ə/ alternant for *December.* This shows that AmE has indeed further progressed in Initial-Pretonic Tensing.

Phonological types of weak front vowels

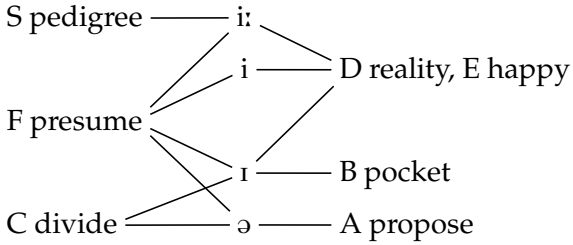
The table in (11) shows that in BrE a gradual tensing tendency is observable, which began with prevocalic /ɪ/ (type D), then spread to final /ɪ/ (type E, *happy*-tensing), and has now reached preconsonantal /ɪ/ in some types of words (type F, PRESUME-tensing). Type S is a strong-vowelled (= stressed) open syllable. In (11) the shaded boxes are the pronunciations given in LPD3. (We present further examples in the appendices.) The symbol 0 means "phonotactically excluded" (since prevocalic schwa is impossible in English).

(11)

		lax ⟷ tense			
	type	ə	ɪ	i	iː
pedig**ree**	S				
pr**o**pose, v**a**riety, s**u**pport	A				
pock**e**t, -**i**ng, -**e**d	B				
d**i**vide, s**e**lect, ped**i**gree, happ**i**ly	C				
r**e**ality, S**e**attle, pr**e**occupy	D	0			
happ**y**, happ**i**ness, pol**y**technic	E				
pr**e**sume, r**e**lease, D**e**cember	F				

We may tabulate the same distribution in the following chart:

(12)



Since not every traditional /ɪ/ is subject to the phenomenon of PRESUME-tensing, we must ask what conditions it. The environments (see more data in the appendices) show only two things. First, in prevocalic position /i/ is obligatory by *happy*-tensing, so /i/ is found in words like *beatitude, deontic, react, reality, Seattle.* Second, /i/ does not appear in a closed syllable (ie it may not be followed by two consonants that are not an onset), eg *exalted* /ɪ/ (/ə, e/), *September* /e/ (/ɪ, ə/). The remaining cases where the vowel is in a weak open preconsonantal position, are not predictable (ie types B, C, F). Wells himself says: "As far as I know, no one uses a tense vowel in *bizarre,* whereas in *behind* and other *be-* words some people do" (Wells 2012). Compare these data from LPD3:

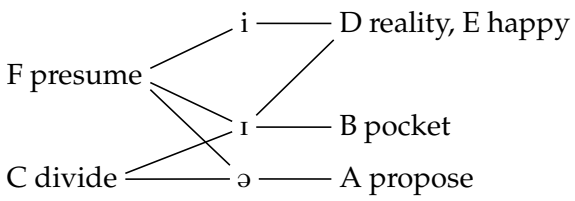
(13)

	earlier	new	type
presume, devise, behind	ɪ (ə)	i (ə)	F
divide, select, bizarre	ɪ (ə) =	ɪ (ə)	C

How can we distinguish *presume, devise, behind,* which show PRESUME-tensing (type F) from *divide, select, bizarre,* which do not (type C)? A solution would be to assume that *presume* and *divide* have different lexical (= underlying) segments in their first nucleus, which are mapped unto different surface interpretations (= pronunciations). This would imply that the lexicon of RP has been restructured; type F words have and underlying tense vowel /i/ (which may be laxed to /ɪ/, or even to /ə/), but type C words have an underlying lax vowel /ɪ/ (which may be further laxed to /ə/ but not tensed to /i/).

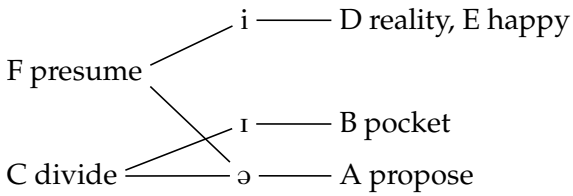
We may regard the optional lengthening of /i/ to /iː/ as a free variant, predictably available in all cases. Therefore we repeat the chart, ignoring those lines as optional and predictable:

(14) S pedigree —— iː



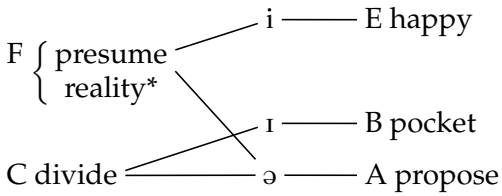
The sound /i/ can—in conservative speech—be pronounced as /ɪ/ in all positions. We regard this as an optional laxing rule, available in all cases. Therefore we repeat the chart without those lines:

(15) S pedigree —— iː



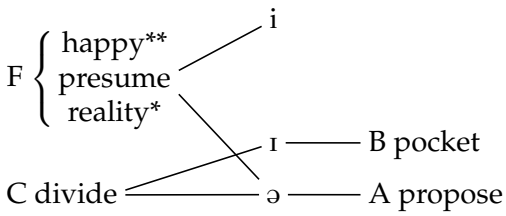
Prevocalic /i/ is barred from becoming /ə/ by the phonotactic constraint of Prevocalic Tenseness. Therefore we may put type D under type F, marking it with an asterisk to show its limited distribution:

(16) S pedigree —— iː



Let us realize that type E, *happy,* is not the neutralization of anything: it has /i/ with its optional variant forms /iː/ and /ɪ/. We may unify it with type F, *presume,* except that now we have to stipulate that /i/ can never become /ə/ before #. (Counterexamples like *happily, merciless, beautiful,* which have /ɪ/ or /ə/, are irregular and must be treated as undergoing stem change to type C. *Hindi,* on the other hand, has two lexical forms: one of type E, one of type S.) We repeat our chart, putting type E with F, and marking it with ** to show its limited distribution:

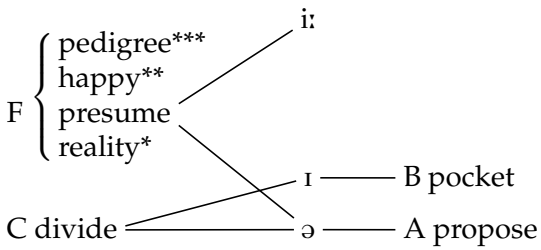
(17) S pedigree —— iː



Now we may claim that lexical /i/ can optionally be reduced to /ə/ except when a rule blocks this reduction. With this in mind, type S, *pedigree,* may also be unified with type F, since type S, being strong or stressed,

will never shorten in an open syllable and never reduce to /ə/. We may unify it with F, all these words having lexical /iː/. Rather than allowing for a lengthening of underlying /i/, we shall allow for a shortening of underlying /iː/ in weak positions. We mark *pedigree* with *** to show that it never reduces due to its strong position:

(18)



Type F, *presume,* is a real neutralization—not of /iː/ and /ɪ/, as Wells claims, but of /iː/ and /ə/. Type C, *divide,* is also a neutralization, this time of /ɪ/ and /ə/. *Presume* and *divide* must be lexically different, since *divide* never has /i/. This cannot be motivated by anything, so it must be lexically given (as it is indeed in LPD3). *Divide* and *pocket* must also be different, since *pocket* never has /ə/ in RP.

With the mapping rules listed above we produce the actual pronunciations of the following lexical forms shown in (19).

(19)

	type	lex.	lax ⟷ tense			
			ə	ɪ	i	iː
pr**o**pose, v**a**riety, s**u**pport	A	/ə/	■			
pock**e**t, -**i**ng, -**e**d	B	/ɪ/		■		
d**i**vide, s**e**lect, ped**i**gree, happ**i**ly	C	/ɪ/∼/ə/	■	■		
pr**e**sume, r**e**lease, D**e**cember† r**e**ality, S**e**attle, pr**e**occupy*† happ**y**, happ**i**ness, pol**y**technic**† pedigr**ee***	F	/iː/	■	■	■	■

† normally short because unstressed
* does not become /ə/ because prevocalic
** does not become /ə/ because followed by #
*** does not become /ə/ because stressed

We have shown that there are four lexical types:

(20) type A, *pr**o**pose,* lexical /ə/, no variation
type B, *pock**e**t,* lexical /ɪ/, no variation
type C, *d**i**vide,* lexical /ɪ/∼/ə/ free variation
type F, *pr**e**sume,* lexical /iː/, with variants /i/∼/ɪ/∼/ə/ (limited by rules)

Pace Cruttenden, we cannot analyse *happy/presume* as phonemic /ɪ/ because then we would not be able to motivate the divergent behaviour of phonemic /ɪ/ in *pocket* or *divide.* Type F can only be phonemic /iː/. The really remarkable group is not type F but type C, *divide,* since its /ɪ/ never gets tensed to /i/ (just like type B, *pocket*), yet it may reduce to /ə/ (just like type F, *presume*). One may venture to predict that this group will sooner or later disappear, being absorbed into the other types.

Conclusion

I have argued that in current RP a restructuring of weak high front vowels has taken place, and *presume/reality/happy/pedigree* all have lexical /iː/. Pronouncing dictionaries may have pedagogical considerations (such as user-friendliness, over-explicitness), or follow their editorial traditions. Phonologically, however, /iː/ is the correct analysis for these weak syllables. If I am right, then PRESUME-tensing does not exist as a phonological rule (any more than *happy*-tensing). Now *presume* is lexically /priː-/, *reality* is /riː-/, *happy* is /-piː/. The /ɪ/ variant in these words must now be produced by a rule of "PRESUME-laxing", which—in old-fashioned speech—optionally turns the weak-position /iː/ into /ɪ/, neutralizing it with lexical weak /ɪ/ in *pocket, divide.*

REFERENCES

Fabricius, Anne. 2002. Weak vowels in modern RP: An acoustic study of HAPPY-tensing and KIT/schwa shift. *Language Variation and Change* 14 : 211–237.

Cruttenden, Alan. 2001. *Gimson's pronunciation of English.* 6th ed. London: Arnold.

Jones, Daniel. 1977. *Everyman's English Pronouncing Dictionary.* Revised by A. C. Gimson, 14th ed. London: Dent. (= EPD14)

Jones, Daniel. 2006. *Cambridge English Pronouncing Dictionary.* Edited by Peter Roach, James Hartman, & Jane Setter. Cambridge University Press. (= EPD16)

Nádasdy, Ádám. 1994. *Unstressed and partially-stressed syllables in English words.* Unpublished PhD dissertation. Budapest: Hungarian Academy of Sciences.

Nádasdy, Ádám. 2006. *Background to English pronunciation.* Budapest: Tankönyvkiadó.

Trudgill, Peter. 2002. *Sociolinguistic Variation and Change.* Edinburgh: Edinburgh University Press.

Upton, Clive, W. A. Kretzschmar Jr., and Rafal Konopka. 2001. *The Oxford Dictionary of Pronunciation for Current English.* Oxford: Oxford University Press. (= ODP)

Wells, John C. 1982. *Accents of English.* Cambridge: Cambridge University Press.

Wells, John C. 2008 *Longman Pronunciation Dictionary.* 3rd ed. Harlow: Pearson Education. (= LPD3)

Wells, John C. 2012. happY again. *John Wells's Phonetic Blog*. 7 June 2012. Retrieved on 2013-02-20 from phonetic-blog.blogspot.hu/2012/06/happy-again.html.

Windsor Lewis, Jack. 2003. IPA vowel symbols for British English in dictionaries. *Journal of the International Phonetic Association* 33/2 : 143–152.

Windsor Lewis, Jack. 2009. Review of LPD3. *Journal of the International Phonetic Association* 39 : 238–240.

Appendix 1: Unstressed *be-*, *de-*, *e-*, *pre-*, *re-*, *se-*

This is a selection of data from LPD3. Note that there may be uncertainties (or downright mistakes) in the data. Examples for PRESUME-tensing appear in **boldface**. The symbol /i/ automatically includes the possibility of lengthening to /iː/ and laxing to /ɪ/.

L = lax; T = tense

✓ = main pronunciation (bold type in LPD3)

X = alternative pronunciation (ordinary black type in LPD3)

x = second alternative pronunciation

0 = excluded by phonotactic constraint (in prevocalic position /ə/ is not permitted, so we find automatic HAPPY-tensing)

*** = surprising, presumably erroneous data

% = the word exists with a different stressing (ignored here)

X1 = with primary stress

X2 = with secondary stress

	strong		weak						
	L e	T iː	T i	L ɪ	ə	_CC	_V	_RV	remark
be-									
beatitude			✓		0		V		
because			✓		X				
believe			✓		X				
bereave			✓		X			RV	
beryllium	X				✓			RV	
besmear			✓		X	.CC			# ?
bestow			✓		X	.CC			
bestrew			✓		X	.CC			
between			✓		X	.CC			
Beyoncé			✓						before /j/
behind			✓		X				
de-									
debrís %					X				
decáde %	X		X						
decathlon	X			✓	X				?
December			✓		X				
decide			✓		X				
decipher		X2	✓		X				(#)
decline (v)			✓		X	.CC			
deconstruct		✓2							#
defect (v)			✓		X				
degrade			✓		X	.CC			
deontic			✓		0		V		
derail		✓2	X					RV	#
derange			✓		X			RV	
derate		✓2						RV	#
deride/-sion/-sive			✓		X			RV	
derisory***		§X		✓	X			RV	error?
derive			✓		X			RV	
derogatory			✓		X			RV	
destroy			✓		X	.CC			
detáil %			X		X				
determine/-er/-ate			✓		X				
determinism***				✓	X				error?
devour			✓		X				

	strong		weak						
	L e	T iː	T i	L ɪ	ə	_CC	_V	_RV	remark
e-									
ecclesiastic				✓	X	.CC			
egressive			✓			.CC			
emancipate			✓		X				
enamel			✓		X				
enamour	X			✓	X				en#amour?
enigma	X		✓		X				
enormous			✓		X				
enough			X		✓				
enumerable			✓		X				
enumerate***				✓	X				error?
epenthesis	✓			X	X				
episcopal	X			✓	X				
equalitarian		X		✓	X	.CC			
equality			✓		X	.CC			
equanimous	X		✓			.CC			?
equatable		X	✓		X	.CC			
equate			✓		X	.CC			
equestrian	X			✓	X	.CC			
equivalence/-t				✓	X	.CC			
eradicate				✓	X			RV	
erotic				✓	X			RV	
erroneous	X			✓	X			RV	
escape	X			✓	X	.CC			
especial	X			✓	X	.CC			
evangelist				✓	X				
event				✓					
evict/-ion				✓					
eviscerate			✓		X				
evoke			✓		X				
evólutive		X		✓	X				
exuberant	X			✓	X	C.C			closed syl.

	strong		weak						
	L e	T iː	T i	L ɪ	ə	_CC	_V	_RV	remark
pre-									
preamble %		X1	✓		0		V		
preclude			✓		X	.CC			
pre-empt		X2	✓		0		V		
prefer			✓		X				
preliminary			✓		X				
preoccupy		X2	✓		0		V		
preordination		✓2			0		V		#
prerequisite		✓						RV	(#)
prerogative			✓		X			RV	
prescribe			✓		X	.CC			
presidium		X	✓		X				
prestigious	✓			X	X	.CC			prestige!
presume			✓		X				
re-									
react			✓		0		V		
reality			✓		0		V		
re-enter		X2	✓		0		V		# !!
rejoice			✓		X				
release			✓		X				
reorder		✓2			0		V		#
respond			✓		X	.CC			
restrict			✓		X	.CC			
se-									
Seattle			✓		0		V		
secede				✓	X				
secretion				✓	X	.CC			
secure				✓	X				
select				X	✓				
senility				X	✓				
September	✓			X	X	C.C			closed syl.
sequential				✓	X	.CC			
serenity				X	✓				
serology		X		✓					
severe				✓	X				

Appendix 2: Other initial pretonic open syllables (not *be-/de-/e-/pre-/re-/se-*)

Another selection of data from LPD3.
* with possible secondary stress
IPT = Initial-Pretonic Tensing

	strong		weak						
	L	T	T	L	ə	_CC	_V	_RV	remark
Spelling ***-i-***									
identify		✓		X	x				IPT
financial		✓		X	x				IPT
dilate		✓		X	x				IPT
dilapidate				✓	X				
dilution		✓*		X	x				IPT
direction[2]		✓		x	X			RV	IPT
Iranian		X		✓				RV	(IPT)
tyrannical		x		✓	X			RV	(ipt)
Italic		x		✓	X				(ipt)
divide				✓	X				
divine				✓	X				
diffuse (a, v)				✓	X				
dimension		✓		X	x				
diminish				✓	X				
digest (v)		✓		X	x				
distract				✓	X				
imagine				✓					
vitality		✓							< vital
virility				X	✓			RV	
virology		✓						RV	< virus
Spelling ***-o-***									
November		✓			X				IPT
omit		✓			X				IPT
donate		✓			X				IPT
profound		X			✓				(IPT)
romantic		X			✓				(IPT)

[2] In pre-R position Wells uses a raised /ə/ to indicate the optional realization of Pre-R Breaking: /darəˈrekʃən/, etc. This is ignored here as it is irrelevant for the present discussion.

	strong		weak						
	L	T	T	L	ə	_CC	_V	_RV	remark
Spelling ***-a-***									
vacation		✓			X				IPT
gradation	x	X			✓				(IPT)
vacate		X			✓				(IPT)
gradate					✓				
catharsis	X				✓				
facility					✓				
Spelling ***-e-***									
pedantic	x			✓	X				
periphery	x			X	✓			RV	
Jerome	x			X	✓			RV	
exalted	X			✓	x	C.C			closed syl.

Ádám Nádasdy
nadasdy.adam@btk.elte.hu
Eötvös Loránd University
Budapest

382. oldal: üres

Structural complexity and "strong positions" in government phonology

Daniel Huber

1 The problem with changes of complex segments in strong positions

This paper examines the relationship between the structural complexity of segments and phonologically strong positions with respect to changes involving secondary places of articulation like those in (1) below.

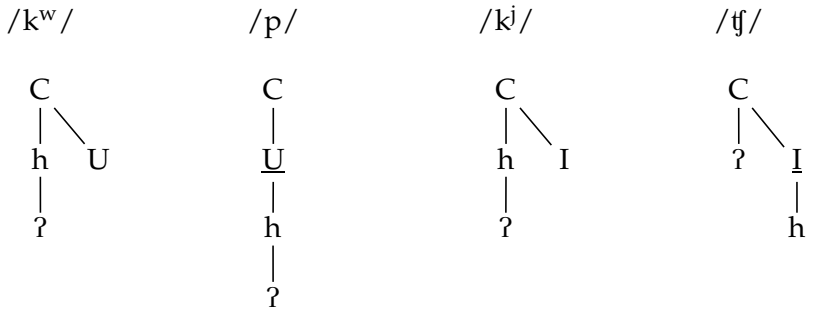
(1) a. *pre-vocalic labialized velars become plain labials*
$k^w > p$ /_V
$g^w > b$ /_V
b. *some data showing the change*
IE *k^w > Ancient Greek *he*[p]*e-* 'follow' (cf Latin *se*[kw]*i-* 'follow')
IE *g^w > Ancient Greek [b]*ous* 'cow' (cf Old English [k]*u* 'cow')

In the framework assumed here, government phonology (Harris & Kaye 1990, Harris & Lindsey 1995, Cyran 1997, Backley & Takahashi 1998, Ségéral & Scheer 1999, Dienes & Szigetvári 1999, etc), there is a direct connection between a phonological event and its phonological environment and this connection rests on the governing and licensing relations obtaining between positions in the string. Thus, for instance, lenition (or weakening) is expected to occur in so-called weak phonological positions such as a "coda" (that is final or pre-consonantal positions), which is an ideal lenition site, where segmental complexity tends to reduce. Strong positions such as "onsets" (that is initial positions before vowels or post-consonantal positions), on the other hand, tend to favour segmental strengthening and the retention of segmental complexity.

Most processes fit neatly into the typology just outlined. For instance, /l/-darkening in English occurs in coda positions and this is a case of vocalic lenition: /l/ becomes more vowel-like, in some varieties a semi-vowel [w]. Some processes are, however, not so straightforward, because they seem at first blush to defy the connection between the phonological position and the process. Such is the case in (1) above where a complex segment with a labial gesture for secondary place of articulation undergoes a change to a structure where the secondary becomes the primary place of articulation and a plain labial consonant emerges. It is crucial to point out that the change occurs in *any* pre-vocalic position: in initial pre-vocalic positions, which is a strong position, as well as in intervocalic pre-vocalic positions, which is a weak position. It will be shown in this paper that this change in strong phonological positions is a genuine case of phonological strengthening and that the change also fits in with weak positions.

The problem with processes like in (1) is twofold. The first problem is that /kʲ gʲ kʷ gʷ/ are represented as contour structures in government phonology (see Cyran 1997 : 212–222 for representations of /ʦ/, /ʦʲ/, /ʧ/ and /kʲ/ in Polish), which makes them phonologically more complex than the resulting labials and about just as complex as the palatal affricates.

(2) *representations of contour and non-branching structures*



But then how does a contour segment become a structurally non-branching segment in the initial prevocalic onset position, that is in a strong position where strengthening is expected to occur? It will be proposed that /kʷ/ and the other segments with a secondary place of articulation should be represented as non-branching structures using complement tiers (a 3D extention, represented by the right-branching element in (3) below) to enhance the colour tier in the sense of Backley & Takahashi (1998).

(3) *proposed representation for /k^{w}/ and /p/, respectively*

The second problem is that even if /k^{w}/ is represented as a non-branching structure, how is the process /k^{w}/ > /p/ an instance of strengthening rather than simplification? It will be argued that /p b/ have a more stable structure because they have a more robust presence of U in their structure, which makes them more stable.

After first presenting cases often cited to illustrate the direct connection between an onset (a strong phonological position) and segmental strengthening (segmental complexity), the more controversial case of labialized velars becoming plain labials, cited in (1) above, will be shown to occur in exactly the same strong phonological context. This means that processes where secondary places of articulation become primary places of articulation in strong phonological positions are genuine examples of strengthening.

2 Segmental complexity and phonological strong positions

Harris (1997 : 343) uses the example of the segment /p/ to illustrate various cases of consonantal reduction trajectories associated with segmental decomposition, that is the suppression of various primes in their representation. All the processes in (4) below are cases of lenition because they result in structurally simpler segments (the suppressed primes are put between ⟨angle brackets⟩).

(4) *lenition trajectories from the segment /p/ = (U, ʔ, h)*
- a. spirantization: /p/ > /f/, ie (U,ʔ,h) > (U,⟨ʔ⟩,h)
- b. stop debuccalization: /p/ > /ʔ/, ie (U,ʔ,h) > (⟨U⟩,ʔ,⟨h⟩)
- c. spirant debuccalization: /p/ > /h/, ie (U,ʔ,h) > (⟨U⟩,⟨ʔ⟩,h)
- d. vocalization: /p/ > /w/, ie (U,ʔ,h) > (U,⟨ʔ⟩,⟨h⟩)

The changes in (4b–d) are not expected to occur in strong positions. Stop or spirant debuccalization tends to appear in coda-positions, vocaliza-

tions occur intervocalically. Although the intervocalic position is a kind of onset position because it is followed by a vocalic position, but since this is a position which is under the influence of both licensing and government, the intervocalic consonantal position cannot exhibit all the complexity a true, initial, onset can. It is a weak position.

While spirantization, in (4a) above, is indeed a reduction process, the choice of data cited by Harris (1997) needs to be modified. Spirantization is perhaps better illustrated by Latin /p/ to French /f/ (or /v/ when still intervocalic in Old French) which happened in the same pre-consonantal or intervocalic position as the other processes in (4b–d).

(5) *reflexes of Latin /p/ in French illustrating spirantization*

Latin	French
ri**p**a 'shore'	ri**v**e
ca**p**u 'head'	che**f** (through Middle French *chief*)
ca**p**ra 'goat'	chè**v**re

Harris cites the High German Consonant Shift for the illustration of this spirantisation. But the change was convincingly established by Davis et al. (1999) and Iverson & Salmons (1995), building on a detailed documentation of the spread of the change, to have passed through a /p/ > /p^{f}/ > /f/ trajectory rather than directly giving /f/ in weak positions. It is best to separate the two phases of the process. The second, /p^{f}/ > /f/, phase of the High German shift is indeed a case of reduction in that an affricate becomes a fricative, but contrary to Harris, it is not directly from /p/ > /f/. However, the High German shift had a first phase, /p/ > /p^{f}/, which occurred in *all* possible positions — worse, it was a gradual process originating in the affrication first of intervocalic plosives after short stressed vowels, according to Davis et al. 1999, Iverson & Salmons 1995. In initial onset and post-coda position, this first phase, affrication, is a case of strengthening so that Harris's typology in (4) can be expanded to include a fortition trajectory next to the reduction trajectories.

(4′) *a fortition trajectory from the segment /p/ = (U, ʔ, h)*
e. affrication: /p/ > /p^{f}/, ie (U, ʔ, h) > (U, ʔ, h; U, h)

The reason why this modification to Harris's choice of data needs to be made is because the weak positions, where spirantization can happen, are systematically different from strong positions where fortition (strengthening) can. Ségéral & Scheer (2001 : 120) offer the following typology of

lenition and fortition sites and give a detailed analysis of strong positions, which they term the "coda-mirror". Underlining marks the site in question.

(6) a. *weak positions*
coda C, that is, _C
final, that is, _#
intervocalic, that is, V_V
b. *strong positions*
initial, that is, #_
post-coda, that is, C_

Coda-mirror, that is strong, positions are favourable for sustaining melodic complexity. This means they either retain melodic structure or favour the gaining of complexity (Ségéral & Scheer 2001 : 120). Retention of melodic complexity can be illustrated by the transition from Latin to French where stops did not change in coda-mirror positions, even though they did in intervocalic or coda positions as the following data show (adapted from Ségéral & Scheer 2001 : 111, 113, with a few more examples added).

(7) *developments of Latin /p/ in French in various strong and weak positions*

Latin	French	position of /p/	gloss
strong positions			
porta-	> **p**orte	initial	'door'
ves**p**a-[1]	> guê**p**e	post-consonantal	'wasp'
weak positions			
ru**p**ta-	> route	pre-consonantal	'road'
ri**p**a	> ri**v**e	intervocalic	'shore'

The process where Latin initial and post-coda /j/ went to French /ʒ/ (or /ʃ/, both through Old and Middle French /ʤ/ or /ʧ/), is a clear case of strengthening in strong positions. The data in (8) are adapted from Ségéral & Scheer (2001 : 127).

Cypriot Greek also has strengthening of /i/ to [k] in post-coda positions (Harris 1996). The change occurs when a post-consonantal /i/ finds itself before a vowel through concatenation. In this morphophonological

(8) *developments of Latin /j/ in French in various strong and weak positions*

Latin	French	position of /j/	gloss
strong positions			
sap**i**am	> sa**ch**e	post consonantal	'know-subj'
jocu-	> **j**eu	initial	'game'
weak positions			
ra**j**a	> raie [rɛ]	intervocalic	'ray fish'

environment /i/ vocalizes to /j/. This semi-vowel is realized in Cypriot Greek as [k] followed by a vowel. Data come from Harris (1996).

(9) *Cypriot Greek /i/ > [k]*
teri 'one of a pair', /teri-azo/ > ter[k]azo 'I match'
vari 'heavy', /vari-uma/ > var[k]uma 'I am bored'

What is crucial here is that this change also appears in a coda-mirror position, after a consonant.

Ségéral & Scheer (2001 : 120) cite the High German Consonant Shift to further illustrate the difference between weak and strong positions. In this shift, Germanic */p/ went to affricate /p^f/ in initial and post-coda position but to fricative /f/ intervocalically and finally, according to the traditional formulation of the rule. (One should specify that pre-consonantally the change did not happen because, due to earlier changes, /p/ could no longer occur in that position monomorphemically — modern words like *Haupt* 'main, head' are later developments.)

(10) *High German Consonant Shift*

English	German
strong positions	
path	**Pf**ad 'path'
pope	**Pf**affe 'priest'
car**p**	Kar**pf**en 'carp'
weak positions	
shee**p**	Scha**f** 'sheep'
po**p**e	Pa**ff**e 'priest'

But there is a problem with these data as presented by the authors. Following the view of Iverson & Salmons (1995) and Davis et al. (1999)

already alluded to, the change from /p/ > /p^f/ occurred eventually in *all* positions, irrespective of whether */p/ had occurred in onset, post-coda or intervocalic position. It was only later that /p^f/ was *kept* in strong positions, as in (10a), while weakening occurred intervocalically, /p^f/ > /f/, as in (10b). In other words, what can be seen in these data is the retention of complexity in strong positions and decomposition in weak positions. Nevertheless, one should first be able to account for the uniform nature of the original change, /p/ > /p^f/ (along with /t/ > /t^s/ and /k/ > /k^x/) since it is only later that the retention of /p^f/ and its reduction to /f/ follow from their respective strong and weak phonological positions. This nuance has implications for the behaviour of intervocalic positions, but I shall postpone this issue until §4. In this section, it had to be pointed out that there is a close relationship between a phonological event and its phonological environment, namely strong positions favour strengthening or retention of complexity while weak positions favour reductions.

3 How is the /k^w g^w/ > /p b/ change fortition in strong positions?

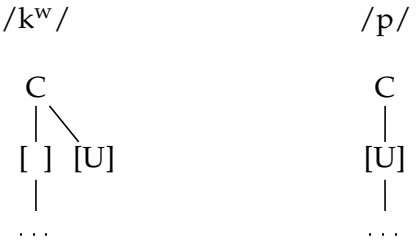
There is plenty of evidence that /k^w g^w/ > /p b/ changes occur in both strong phonological positions and in weak positions (Huber 2007 : 231–262) as the data in (11) show.

(11) a. /k^w/ > p / _V
/g^w/ > b / _V
b. *more data*
IE *k^w > Ancient Greek *he*[p]*e-* 'follow' (cf Latin *se*[kw]*i-*)
IE *k^w > Ancient Greek [p]*oinē* 'punishment' (cf Lithuanian *kainà*)
IE *g^w > Ancient Greek [b]*ous* 'cow' (cf Germanic [k]*u* 'cow')
IE *g^w > Ancient Greek [b]*ainō* 'to come' (cf Dutch [kw]*aam* 'came')
Lat. *a*[kw]*a* > Rumanian *a*[p]*ă* 'water'
Lat. [kw]*attuor* > Rumanian [p]*atru* 'four'
Lat. [kw]*i* > Rumanian [p]*e* 'that; CONJ'

It is important to point out that the change is not triggered by its melodic or prosodic environment (see Huber 2009).

As already pointed out, /k^w/ is represented as a contour structure and /p/ as non-branching in the received government phonological approach. Under this view, strengthening of /k^w/ to /p/ happens exactly as expected in strong positions, and /p/ is stronger structurally by virtue of having U in the head, while /k^w/ has U in a dependent position.

(12) *the representation of /k^{w}/ and /p/*



This approach is rather similar to the proposal made by van der Hulst (1994 : 460), where a labialized velar is defined by a dependent structure, C_V, while a labial has the same structure but in head position within the locational gesture.

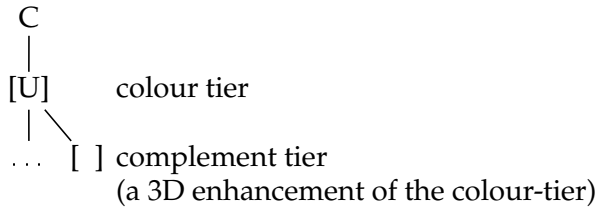
(13) *labialized velar > labial*

The problem with these representations is that the change /k^{w} g^{w}/ > /p b/ produces structurally simpler sounds, /p/ and /b/, in a strong position, where "gaining structure" rather than simplification is expected. It is not obvious how the loss of the branching structure of /k^{w}/ can be interpreted as "gaining structure" in either government phonology or in the radical CV theory of van der Hulst. The proposal here rests on two assumptions. The first is that velars are supposed to have no place specification so that other place specifications can readily occupy their vacant place slot (Harris & Lindsey 1995, Cyran 1997, van der Hulst 1994, Huber 2007, for the treatment of a similar labial–velar interaction see Huber 2010). The second is that the representation of /k^{w}/ is not in fact a contour structure, rather it is non-branching with no melody on the "complement tier". Combining these two approaches, /k^{w}/ > /p/ is a case of strengthening because it happens in strong positions and because /p/ is structurally more stable by virtue of having U both on the colour and the complement tier, while /k^{w}/ has U only on the colour tier.

The proposal put forward by Backley & Takahashi (1998) on melodic tiers and complement tiers is then assumed here. It will be argued that the

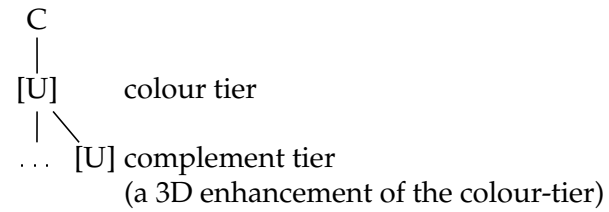
labialized velar stop is not a contour structure. Rather it has a colour tier, which is dominated by the U element, and no filled-in complement tier to reinforce this labiality.

(14) a. *the representation of /k^{w}/ using a colour tier and a complement tier*



A plain labial stop, on the other hand, has both a colour tier dominated by U, and a complement tier dominated by the same U element. The representation below only shows the colour tier and its complement tier, leaving out all other elements.

(14′) b. *the representation of /p/ using a colour tier and a complement tier*



The changes in (11) then involve the activation of the U complement tier in a pre-vocalic, that is, a licenced position. Activating the complement tier means that the segment becomes both more stable—its labiality is reinforced —, and more complex than it had been before the change (although neither is a contour structure). Therefore, becoming more stable structurally—in this case, gaining melody or primary place specification—is a genuine form of phonological strengthening, which occurs in phonologically strong positions, just as expected. This had to be pointed out.

4 How does the proposed analysis square with the representation of intervocalic lenitions?

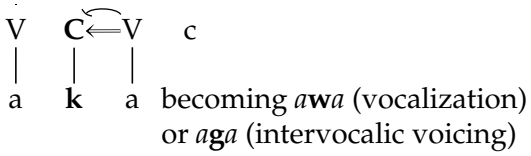
It can be observed that in general, changes of /k^{w}/ all tend to give a more stable structure. Indo-European languages that show simplification of IE

*k^{w} to /k/ (like Slavic or Indic) could be said to prefer having no melody in velars to having a non-reinforced (labial) melody. It would seem that languages can prefer having no melody to keeping some melody as secondary place of articulation, and this results in more stable segments. Other languages have opted for forming a sequence /kw/ out of /k^{w}/. This seems to be a wide-spread strategy (and it often develops further into /kv/). It is not, however, the purpose of the present paper to go into details about whether there is a meaningful phonological difference between /kw/ and /k^{w}/ in a given language and what these criteria are. Finally, a number of languages had historically opted for extending the U element of /k^{w}/ to the complement tier, giving a more stable structure, /p/. These trajectories are summarized below.

(15) *possible trajectories of /k^{w}/*
  a. /k^{w}/ > /k/
  b. /k^{w}/ > /kw/
  c. /k^{w}/ > /p/

The problem of intervocalic strengthening needs to be addressed here. In government phonology, an intervocalic position is a position which is both licenced and governed, meaning that this position is subject to the impacts of both licensing and government. It was in this sense that Ségéral & Scheer (2001) regarded this position as a weak position. Dienes & Szigetvári (1999 : 12) predict lenition of the vocalic type in this environment. This is typically manifest in vocalisations or voicing of intervocalic obstruents.

(16) *both licensing and government affecting intervocalic /k/*



Nevertheless, both affrication of /k/ > /k^{x}/ (along with /p/ > /p^{f}/ and /t/ > /t^{s}/), the first general stage of the High German Consonant Shift (when all voiceless plosives uniformly turned into affricates), and /k^{w}/ > /p/ can happen in this intervocalic environment. This implies that beyond cases of vocalisation and intervocalic voicing, one must admit affrication and fortitions like /k^{w}/ > /p/ as occurring in this governed and licensed intervocalic position.

(17) *lenition trajectories of /k^{w}/—a fuller range*
  a. a/k/a > a[w]a, vocalisation
  b. a/k/a > a[g]a, intervocalic voicing
  c. a/k/a > a[k^{x}]a, affrication
  d. a/k^{w}/a > a/p/a, secondary to primary place of articulation

As for the /k^{w}/ > /p/ change, extending a *melodic,* that is a *par excellence* vocalic, element from the colour tier to the complement tier can be seen as vocalic lenition in the sense that the consonants become even more vowel-like, that is more melodious. The same change, however, was regarded as a consonantal change, that is fortition, in the sense that the structure becomes simpler than a contour structure, as argued in §3 above.

A similar analogy will hardly work for intervocalic affrications, though. The rule of "breaking" evoked by Harris & Kaye (1990 : 262), where the elements split into a contour structure in intervocalic position, to account for the first stage of *t*-lenition does not work for affrication because the resulting contour structure keeps most of the original elements, it is not a simple repartitioning of elements into a contour structure. A detailed exposition is beyond the scope of this paper, though. One can say that affrication is a form of lenition because these segments often tend to be unstable historically precisely because of their contour structure. Changes affecting affricates, such as de-affrication or fricativization, either affect affricates in all positions in a language (Middle French /ʧ ʤ/ > modern French /ʃ ʒ/ across the board) or only those in weak positions (reflexes of the High German Consonant Shift)—but there are no reported cases as far as I am aware where affricates decompose in strong positions but not in weak positions.

5 Conclusions

The paper established that changes where labialized velars become plain labials, /k^{w}/ > /p/ or /g^{w}/ > /b/, are genuine cases of fortition, that is segmental complexification. Data were presented to show that these processes occur in onset, post-coda positions, that is strong, as well as in intervocalic, that is weak positions. A representation for labialized velars was then proposed where they are not a contour structure, but have a non-branching structure like plain labials. This structure has a colour tier and a complement tier. A labialized /k^{w}/ differs from a plain labial /p/ in the presence of the melodic element U on the complement tier in addition to the U element on the colour tier in both structures. Data also reveal that the change occurs in intervocalic positions, which calls for an explanation in terms of vocalic lenition. A proposal was made that extending the colour

tier, that is the primary melody, to the complement tier makes the segment more melodious, hence more vocalic in a sense. The reason why /k^{w}/ > /p/ or /g^{w}/ > /b/ can occur in both strong or weak position is because they satisfy some aspects of both phonological contexts.

REFERENCES

Backley, Phillip and Toyomi Takahashi. 1998. Element activation. In: Eugeniusz Cyran (ed.), *Structure and Interpretation. Studies on Phonology. PASE Studies and Monographs. Vol. 4.* Lublin: Folium. 13–40.

Cyran, Eugeniusz. 1997. *Resonance Elements in Phonology: A Study in Munster Irish. PASE Studies and Monographs. Vol. 3.* Lublin: Folium.

Davis, Garry, Gregory K. Iverson, and Joseph C. Salmons. 1999. Peripherality and markedness in the spread of the Old High German Consonant Shift. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 121(2): 177–200.

Dienes, Péter and Péter Szigetvári. 1999. Repartitioning the skeleton: VC phonology. Ms Eötvös Loránd University, Budapest.

Harris, John and Geoff Lindsey. 1995. The elements of phonological representations. In: Jacques Durand and Francis Katamba (eds.), *Frontiers of Phonology: Atoms, Structures, Derivations.* London: Longman. 34–79.

Harris, John. 1996. Phonological output is redundancy-free and fully interpretable. In: Jacques Durand and Bernard Laks (eds.), *Current Trends in Phonology.* CNRS & University of Salford, UK: European Studies Research Institute. 298–231.

Harris, John. 1997. Licensing Inheritance: an integrated theory of neutralization. *Phonology* 14 : 315–370.

Harris, John and Jonathan Kaye. 1990. A tale of two cities: London glottalling and New York City tapping. *The Linguistic Review* 7 : 251–274.

Huber, Dániel. 2007. Velars and Processes: Their Treatment in Phonological Theory. PhD Dissertation. Ms Eötvös Loránd University, Budapest.

Huber, Dániel. 2009. On the interaction of velars and labials. *International Journal of Basque Linguistics and Philology* (ASJU) 41(2): 145–161.

Huber, Dániel. 2010. On *k*^{w}*–f* alternations in Bangkok Thai and other Tai languages. *Mon-Khmer Studies Journal* 39 : 155–165.

van der Hulst, Harry. 1994. Radical CV Phonology: the locational gesture. *UCL Working Papers in Linguistics* 6 : 439–477.

Iverson, G. K. and Joseph C. Salmons. 1995. Aspiration and laryngeal representation in Germanic. *Phonology* 12 : 369–396.

Ségéral, Philippe and Tobias Scheer. 2001. La Coda-Miroir. *Bulletin de la Société de linguistique de Paris* 96 : 107–152.

Daniel Huber
dhuber@univ-tlse2.fr
Université de Toulouse 2—Le Mirail
CLLE-ERSS, CNRS

Palatal controversies

Péter Siptár

1 Introduction

Unlike the palatal approximant /j/ that occurs in 85% of the world's languages (Ladefoged & Maddieson 1996 : 322), other palatal consonants are relatively rare cross-linguistically. We can come across the palatal nasal /ɲ/ in 31% of the 451 languages represented in the UPSID database (Maddieson 1984), while the plosives /c ɟ/ and/or the affricates /c͡ç ɟ͡ʝ/ are even less well-attested (Ladefoged 2005 : 163). Voiceless /c/ occurs in 12%, and voiced /ɟ/ in 9.5%, of the languages of UPSID. Both plosives exist eg in Azerbaijani, Basque, Breton, or Turkish, as well as in the Uralic languages Komi (Zyryan) and Nganasan; only voiceless /c/ is found in Vietnamese or Khanty (Ostyak). Long /cː/ is said to be present in a single language of the database: Waray, spoken in Australia; and long /ɟː/ to only occur in Wolof, spoken in Gambia and Senegal. Of the palatal affricates, voiceless /c͡ç/ appears in 2.7% and voiced /ɟ͡ʝ/ in 1.8% of languages in the database. Both can be found,[1] eg in Albanian, Mandarin Chinese, and Komi (thus, in the latter, the two plosives contrast with the two affricates). The voiceless palatal fricative /ç/ occurs in 2.44% of the languages as a contrastive segment, eg in Irish, Mandarin, and Norwegian; and its voiced counterpart /ʝ/ in 2.66%, eg in Inuit (Greenlandic). Both fricatives can be found in Komi (a language that can now be seen to exhibit as many as six palatal obstruents). Returning to the more frequently occurring palatals: /ɲ/ is attested in 141 languages of the database, and /j/ in 378, thus turning out

[1] The database takes Hungarian to be one of the languages that have both palatal affricates (and neither of the palatal stops); in other words, it claims that the Hungarian palatal obstruents orthographically represented as *ty* and *gy* are affricates, rather than plosives. This is of course controversial, see section 3 below. Hungarian *tty* and *ggy* are not represented in the database, either as long plosives or as long affricates; *nny* and *jj* are also absent.

to be, after /m/ and /k/, the third most frequently occurring consonant in the world's languages.[2]

In Hungarian speech, palatal consonants come in a variety of shapes and sizes: almost all logically possible combinations of manner of articulation, voicing, and length can be found in one or another position or context. The set of attested "speech sounds" includes plosives ([c cː ɟ ɟː]), fricatives ([ç ʝ]), affricates ([c͡ç c͡ːç ɟ͡ʝ ɟ͡ːʝ]), nasals ([ɲ ɲː]), and approximants ([j jː j̃]), fifteen phonetically distinct items in all. Contrastive segments (phonemes), however, are less numerous: there are only four short palatals: /c ɟ ɲ j/, as the following minimal triplets show: *atya* 'father' : *agya* 'his brain' : *anya* 'mother'; *gyár* 'factory' : *nyár* 'summer' : *jár* 'walk (v)' (plus their long counterparts in words like *pötty* 'polka dot', *meggy* 'sour cherry', *könny* 'tear (n)', and *gally* 'twig').

In this paper, we will first summarise what we can find out concerning the frequency of occurrence of Hungarian palatal consonants from a recent statistical survey (§2), then we will consider the issue whether non-continuant palatal obstruents are to be phonologically categorised as plosives or as affricates (§3). Finally, we will look at the distribution of palatal fricatives and (non-nasal) approximants;[3] our primary question will be whether /j/ is a fricative or a glide (or perhaps something quite different; §4). In §5 we give a brief summary of our conclusions.

2 On the frequency of occurrence of palatal consonants

According to a recent survey of phoneme statistics involving a fairly large spontaneous speech sample (100 speakers, 26 hours of material, 151,161 words, 748,099 phonemes), the token frequencies of Hungarian palatal consonants are as follows (Beke et al. 2012): /ɟ/ is the eighth most frequent consonant, involving 4.75% of the total number of occurrences; /j/ is the 16th most frequent (1.72%); /ɲ/ is the 20th (0.72%), and /c/ is the 38th

[2] Taking all palatal consonants as a class, 405 languages (90%) of UPSID have at least one palatal; of the 919 different consonants found in the database, 63 types of palatal consonants are told apart, almost 7% of all consonant types. Most of these, however—including rather exotic types like "voiceless aspirated palatal lateral affricated click", "prenasalised voiced palatal sibilant affricate" or "voiced palatal trill"—occur in a single language (different ones, of course) of the 451 languages considered.

[3] The nasal approximant [j̃] is a lenited variant of /ɲ/, occurring in words like *lányság* [laːj̃ʃaːg] 'maidenhood', *hányszor* [haːj̃sor] 'how many times', *vényre* [veːj̃rɛ] 'by prescription'. This segment (and the palatal nasal in general) will be ignored in what follows.

(0.02%). The authors counted long consonants separately; /ɲː/ occupies the 28th place (0.156%), /jː/ is the 40th (0.0097%), /ɟː/ is the 42nd (0.0076%) and /cː/ is the least frequent consonant of all (45th place, 0.0004%). However, in order to be able to interpret all these figures, we have to see what exactly it was that the authors counted.

As they point out in their article, they counted phonemes in the generative sense (ie underlying segments) rather than (surface/taxonomic) phonemes in the structuralist sense. This means, for instance, that the word *portya* [porcɔ] 'cruise' would be taken into account as containing /c/ but the word *partja* [pɔrcɔ] 'its shore' would qualify as containing a /t/ and a /j/, and not as containing a /c/. Similarly, in *padja* [pɔɟːɔ] 'its bench', *kínja* [kiːɲːɔ] 'its agony', the authors would find /d/ plus /j/ and /n/ plus /j/, respectively, rather than /ɟː/ and /ɲː/. No wonder that /t/ and /n/, the most frequent Hungarian consonants anyway, show up as even more loaded than they actually are: they take the first two places with 11.97% and 10.98%, respectively (while /d/ comes in 11th, with 3.69%). Thus, owing to the particular principles of what counts as what, dentals and /j/ show higher occurrence figures than we would expect, and the rest of the palatals appear to be even less widespread than they are in reality. The extremely poor result of /c/ is especially conspicuous: falling far behind the other short consonants, it ended up at the 38th place, intermingled with long consonants (even though the occurrence of long consonants was also rather under-calculated by the authors: they considered underlying geminates only, disregarding derived ones).[4] It is true that word initial /c/ is notoriously rare: apart from a few interjections, it only occurs in *tyúk* [cuːk] 'hen' and its derivatives. However, word internally and word finally, it can be heard in spontaneous Hungarian speech a lot more times than what the statistics suggest (that is, more often than once in every five thousand segments, cf Gósy 2004 : 85–89).

But that is still not the whole story. It is not even the case that the authors counted underlying phonemes (as they claim they did): what they actually counted were the letters of the orthographic transcript of their spon-

[4] On the distinction between underlying vs derived geminates, cf Siptár (2012a) and the literature cited there. Note that the under-representation of long consonants mentioned in the text is compensated for to some extent by the fact that degeminated consonants were counted as long (geminate) ones; for instance, in *hallgat* [hɔlgɔt] 'listen', the authors would count /lː/ (accordingly, long /lː/ occupies the 22th place in their list, as the second most frequent long consonant after /tː/ that sits in the 19th place).

taneous speech material. This is revealed[5] by the fact that — in addition to overall frequency of occurrence — they counted positional frequency, too, and they suggest that the very illustrious fourth place of /ɟ/ in word final position is due to the fact that the conjunction *hogy* 'that' and the indefinite article *egy* 'a/an' turn up extremely often in spontaneous speech. Actually, however, *egy* ends in long [ɟː] rather than in [ɟ], at least before a pause or a vowel-initial word (while before words beginning with a voiceless consonant, the final segment is [c] in both *egy* and *hogy*). Of course, the authors have their good reasons for ignoring voicing assimilation (as long as they are interested in underlying segments), but then they have to abstract away from degemination, too: and then the word *egy* must end in /ɟː/ (in any position). The fact that conventional Hungarian orthography prescribes the spelling *egy* for /ɛɟː/, rather than the more faithful *eggy*, is by no means a phonological (phoneme frequency-related) matter.

3 Plosives or affricates?

Turning to the classification of the non-continuant obstruents /c ɟ/, there is no consensus in the Hungarian literature concerning whether they are plosives or affricates (cf Kovács 2002 and the literature cited there).[6] Their surface realisation may indeed be affricate-like ([c͡ç], [ɟ͡ʝ]) to a variable extent.[7] Before stressed vowels (*tyúk* [c͡çuːk] 'hen', *gyár* [ɟ͡ʝaːr] 'factory') and word finally (*korty* [korc͡ç] 'gulp', *vágy* [vaːɟ͡ʝ] 'desire') they tend to be quite strongly

[5] In addition to their remark that, before beginning their statistical survey, they replaced all orthographic *ly*'s by *j* (as both graphemes stand for /j/ in Hungarian orthography). This would have been totally unnecessary if the material had been available in phonemic transcription (rather than in conventional orthography) in the first place.

[6] It is also debated whether, in terms of the active articulator involved, they are coronal or dorsal; that is, exactly which region of the tongue they are articulated with. We will not go into this issue here (cf Geng & Mooshammer 2004). What is more, it has even been claimed (Pycha 2009 : 26–27) that the Hungarian sounds corresponding to the orthographic symbols *ty, gy, ny* are not palatal but rather palatalised: [tʲ, dʲ, nʲ] — this, however, is clearly based on some misunderstanding and will not be further discussed here.

[7] The following account is based on observation/self-observation (cf Siptár 1994 : 206–207, Siptár & Törkenczy 2000 : 82–83), hence it is to be treated "with a pinch of salt"; Kovács (2002) presents experimental results with respect to some of the contexts listed here (intervocalic /c/, word initial /ɟ/) but, unfortunately, the most "sensitive" environments have been left out of her otherwise very carefully designed experiments — on the basis of which, incidentally, she also comes to the conclusion that these two consonants are plosives, rather than affricates.

affricated; much less so before an unstressed vowel (*ketyeg* [kɛcɛg] 'tick (v)', *magyar* [mɔɟɔr] 'Hungarian'), and not at all before a plosive (*hagyta* [hɔctɔ] 'left it', *ágyban* [aːɟbɔn] 'in bed'). The fricative component is variably present before /r/ (*bugyrok* [buɟrok] ∼ [buɟ͡ɟrok] 'bundles'); before /l/ lateral release can be observed as in plosives (compare *fátylak* [faːclɔk] 'veils' with *hátlap* [haːtlɔp] 'reverse side') and only under strong emphasis do we find a fricative component as with true affricates (compare *fátylak* [faːc͡çlɔk] 'veils' with *vicclap* [vit͡slɔp] 'comic journal').[8] Of the nasals, /m/ may be preceded by slight affrication (*hagyma* [hɔɟmɔ] ∼ [hɔɟ͡ɟmɔ] 'onion'), but /n/ and /ɲ/ may not (*hagyna* [hɔɟnɔ] 'he would leave some', *hegynyi* [hɛɟɲi] 'as large as a hill'). The degree of affrication depends further on style and rate of speech: in slow, deliberate speech it is much stronger than in fast or casual styles. This wide range of variables and varieties should raise our suspicion that we have to do with plosives here which, under the appropriate circumstances, are more or less affricated due to obvious physiological factors; notice that true affricates fail to exhibit such extensive variability.

All this is quite suggestive — but what we would need at this point is some concrete evidence that makes the plosive interpretation of /c ɟ/ not only possible but strongly motivated as well. Two such pieces of evidence readily come to mind (Siptár 1994 : 206–207). The first concerns the surface realisation of the first consonant in plosive + plosive vs affricate + plosive clusters. In a pre-plosive position, plosives can be realised by their unreleased variants, eg *kapta* [kɔpˀtɔ] 'he got it', *rakta* [rɔkˀtɔ] 'he put it', whereas affricates obviously cannot, since they do not have such allophones: *barack* [bɔrɔt͡sk] (*[bɔrɔtˀk]) 'peach', *bocskor* [bot͡ʃkor] (*[bot̚ˀkor]) 'moccasin'. Now, /c/ and /ɟ/ are usually unreleased in this position: *hegytől* [hɛcˀtøl] (*[hɛc͡çtøl]) 'from the hill', *hagyd* [hɔɟˀd] (*[hɔɟ͡ɟd]) 'leave it!'.[9] This property clearly shows that they pattern with plosives.

The other argument is based on the phenomenon that affricates are resistant to OCP-driven fusion across a word boundary (cf Siptár 2012a). Sequences of identical plosives are merged into geminates in any style of speech and under any speech rate: *szép pár* [seːpːaːr] 'nice couple', *két tag* [keːtːɔg] 'two members', *sok kör* [ʃokːør] 'many circles', whereas pairs of affricates remain unmerged in careful speech and are pronounced as se-

[8] Before /j/, palatal /c ɟ/ behave exactly like the other pair of coronal plosives (/t d/): *bátyja* [baːcːɔ] 'his brother' ∼ *látja* [laːcːɔ] 'he sees it', *hagyjon* [hɔɟːon] 'let him leave some' ∼ *adjon* [ɔɟːon] 'let him give some'.

[9] In some cases (before velars?) /c/ may vacillate though: *hetyke* [hɛcˀkɛ] ∼ [hɛc͡çkɛ] 'pert'.

quences of two separate, full-fledged affricates (*rác cég* [raːt͡s t͡seːg] 'Serbian firm', *bölcs csere* [bølt͡ʃ t͡ʃɛrɛ] 'wise change'). In colloquial speech, the first affricate may lenite into a fricative ([raːst͡seːg], [bølʃt͡ʃɛrɛ]), and it is only in fast and/or casual speech that the OCP has its way, followed by degemination where appropriate ([raːt͡ːseːg], [bølt͡ʃɛrɛ]). Now if we look at phrases like *négy tyúk* 'four hens', *nagy gyár* 'big factory', we find that the merger applies automatically and obligatorily:[10] [neːcːuːk], [nɔɟːaːr], as opposed to what happens in true affricates. On the basis of what we said in the previous paragraph, this is not at all surprising: a merged fake geminate is nothing but the sequence of an unreleased and a "normal" realisation of the given consonant.

In sum: /c ɟ/ are palatal plosives in Hungarian; in the appropriate phonetic contexts, under appropriate conditions in terms of stress, speech rate, and speech style, they become affricated, as is to be expected for physiological reasons. However, this does not warrant their classification as affricates.[11] Next, we turn to some controversial issues surrounding the classification of the palatal continuant, /j/.

4 Fricative or glide?

The traditional (Hungarian) definition of /j/ is "voiced palatal fricative" (eg Kassai 1998 : 130); this is plainly wrong in that fricatives (as a subclass of obstruents) are supposed to exhibit turbulent noise whereas /j/ — in the contexts #_V, V_V, V_#; V_C, C_V, eg in *jó* 'good', *hajó* 'ship', *haj* 'hair'; *rajta* 'on it', *rakja* 'puts it', that is, in the overwhelming majority of all possible contexts — is a palatal approximant (phonetically), produced without any noise of friction and without being (actively) "voiced" in the sense in which voiced obstruents are.[12] There is, however, a special context in which true fricative allophones of /j/ are found: C_# (followed either by a pause or a

[10] In over-careful speech, two separate (released) consonants may occur with a brief pause sandwiched in between: [neːc-cuːk], [nɔɟ-ɟaːr], but then this is also possible for the other plosives ([seːp-paːr], etc). However, "deaffricated" forms like *[neːçcuːk], *[nɔɟɟaːr] are totally unacceptable, unlike in the case of true affricates.

[11] Think of the somewhat similar case of English /t/: in a number of accents — including RP itself, cf Buizza & Plug (2012) — it undergoes affrication in the appropriate environments ([ts]), but this obviously does not affect its place in the system of phonemes.

[12] For further details on this issue, cf Siptár (2003 : 457–458) and the literature cited there.

consonant initial word).[13] Here, if the left-flanking consonant is voiceless (and its effect is not undone by a voiced obstruent in the next word, as in *lépj be* 'enter!'), /j/ will be realised as a voiceless (fortis) palatal fricative ([ç]): *kapj* [kɔpç] 'get!', *rakj* [rɔkç] 'put'! *döfj* [døfç] 'stab!'; while if the left-flanking consonant is a sonorant or a voiced obstruent, /j/ is realised as a lenis palatal fricative ([ʝ]) as in *fürj* [fyrʝ] 'quail', *szomj* [somʝ] 'thirst', *dobj* [dobʝ] 'throw!'. The final [ʝ] here will be fully voiced if a consonant initial word follows;[14] whereas if nothing follows, it will lose most of its vocal cord vibration (just like utterance final voiced obstruents in general) but will not become fortis.[15]

Thus, the "elsewhere" allophone of /j/ (*jó, hajó, haj; rajta, rakja; rakj oda*) is not a fricative phonetically. But perhaps phonologically this segment nevertheless behaves as an obstruent? If this were the case, its classification would not have to care that its phonetic quality shows otherwise in almost all contexts; as we have just seen, /j/ does have fricative allomorphs, too, albeit in a very restricted set of contexts. However, it cannot be an obstruent phonologically, either: in that case it would have to participate in voicing assimilation—but it neither triggers nor undergoes that process (cf *fáklya* [faːkjɔ] (*[faːgjɔ]) 'torch' and *ajtó* [ɔjtoː] (*[ɔçtoː]) 'door', respectively), except in the word final cases mentioned in the previous paragraph, where it is obstruentised first.

But if /j/ is not an obstruent, hence not a fricative, what is it? The major classes of sonorants are nasals, liquids, and glides (semivowels). Given that /j/ is obviously not a nasal, three possibilities remain open: we either set up a brand new class for it within sonorants ("approximants"), or we classify them as liquids, or as glides. All three solutions have been proposed in the literature.

The solution involving a novel category was proposed by Dressler & Siptár (1989 : 44), noting that there is no general phonetic or phonological reason why /j/ should share a natural class with /l/ and /r/.[16] Similarly,

[13] On the other hand, in the context C_#V, we get the approximant allophone again, eg *rakj oda* [rɔkjodɔ] 'put me there!'.

[14] Except, of course, when the following word begins with a voiceless obstruent: in that case, due to the general rule of voicing assimilation, the whole cluster—or rather, all obstruents in it—will become voiceless, eg *vágj ki* [vaːkçki] 'cut out!'.

[15] For further details and a rule-based analysis, cf Siptár (2003 : 463–468); see also Siptár & Törkenczy (2000 : 205–206).

[16] As we will see later, this claim is false; cf also Dressler & Siptár (1998 : 51) where the claim is withdrawn.

/j/ is taken to be an approximant as the sole member of a separate category by Szende (1992); cf also Cser & Szende (2002). Unless, however, both of the other two options turn out to be untenable, Occam's razor suggests that this is the least preferable option of the three. Second, /j/ is taken to be a liquid in Nádasdy & Siptár (1989 : 15–16), also in eg Siptár (1993, 2003), and it will be argued to be a liquid here, too. But in most of the relevant literature (eg Vago 1980, Olsson 1992, etc, and all current element-based accounts, cf Szigetvári 1998, 2001, and the copious literature referred to there) we find the claim that /j/ is a glide.

Now if /j/ is a glide, the first question that arises is whether there are diphthongs in Standard Hungarian. This has been repeatedly argued not to be the case (and refuted beyond reasonable doubt),[17] but, although the relevant arguments clearly disprove the existence of diphthongs, they do not actually exclude the possibility that /j/ should be a glide sitting in onset/coda position. Nevertheless, I wish to maintain that /j/ in Hungarian is a liquid ([+ cons, + son]), and not a glide ([– cons, + son]). Part of my reasons for that are based on the existence of the obstruent allophones mentioned above; these are technically easier to derive if the segment is underlyingly [+ cons] to begin with. But the claim that /j/ is not simply the vowel melody /i/ sitting in a nonnuclear syllable position (ie a glide) can also be supported by some empirical evidence. This is what we turn to now.[18]

The first piece of evidence is based on the phenomenon of hiatus resolution (cf Siptár & Törkenczy 2000 : 282–286; Menyhárt 2006, Olaszy 2010). Some languages resolve each and every hiatus or do not make it possible for hiatuses to come about in the first place, or else get rid of them in some other way (cf Siptár 2012b : 673–678); whereas others, like Hungarian, exhibit both resolved and unresolved hiatuses (eg *dió* [diʲoː] 'walnut', *tea* [tɛɔ] ∼ %[tɛʲɔ] 'tea', *fáraó* [faːrɔoː] ∼ *[faːrɔʲoː] 'pharaoh', where % identifies a form that is not accepted by all Hungarian speakers, and * identifies one that no native speaker would accept as correct).

What determines which hiatus is resolved and which one is not (cf Markó 2012; Rácz 2012a, b)? Whether the vowel cluster is monomorphemic

[17] Phonetic diphthongs do occur in Hungarian, and it has been argued (by Kylstra & de Graaf 1980, Kylstra 1984) that they are best analysed as such in phonological terms, too. The counterarguments presented by Kassai (1982, 1984) and by Siptár (1994 : 172–174, 200; 2003 : 406–407; Siptár & Törkenczy 2000 : 16–18) are more than sufficient to dispel this notion once and for all and will not be repeated here.

[18] The arguments that follow are based on those presented in somewhat more detail in Siptár (2003).

or arises across a morpheme (or even word) boundary is irrelevant: *kiált* [kiʲaːlt] 'cry' and *kiállít* [kiʲaːlit] 'exhibit' (preverb + verb) both show hiatus resolution (just like *ki áll itt?* [kiʲaːlitː] 'who is standing here?'), whereas *Bea* [bɛɔ] ⟨a first name⟩ and *bead* [bɛɔd] 'hand in' (preverb + verb) both surface with unresolved hiatus (as does *be a dobozba* [bɛɔdobozbɔ] 'into the box').

Rather, the key is the quality of the two vowels involved: if one or both is/are either /i/ or /iː/, resolution is (practically) obligatory, if one or both is/are /eː/, resolution is optional; and there is no resolution in any other case (ie if both vowels are either low or round or both): more exactly speaking, no spreading of the melody of an adjacent /i/ or /iː/, or of part of the melody of an adjacent /eː/, to the empty onset position can take place since there is no such melody present on either side (Siptár 2012b : 686–687; see Siptár 2008 for an optimality-theoretic analysis of the whole issue of hiatus avoidance/resolution in Hungarian).

The fact that makes this phenomenon relevant to our present purposes is that the intrusive [j] like sound that resolves hiatus is (or may be) weaker, more transitional, than the implementation of an underlying /j/ (Siptár 2011 : 154–156). Compare pairs of forms like *kiáll* [kiʲaːl] 'stand out' and *kijár* [kijaːr] 'go out (repeatedly)', *Adria* [ɔdriʲɔ] 'the Adriatic' and *Adrija* [ɔdrijɔ] 'his Adrienne (dim)', *baltái* [bɔltaːʲi] 'his hatchets' and *altáji* [ɔltaːji] 'Altaic', *estéi* [ɛʃteːʲi] 'his evenings' and *estélyi* [ɛʃteːji] 'evening dress', or *kávé után* [kaːveːʲutaːn] 'after coffee' and *kávé jut ám* [kaːveːjutaːm] 'there will be coffee': the difference indicated in the transcription is clearly observable in guarded speech — although it may be blurred in more colloquial renderings. If we now assume that /j/ is a liquid, while the inserted element involved in hiatus resolution is obviously a glide (on the spreading account hinted at above, it cannot be anything else), this potential phonetic difference is automatically explained in a simple and elegant manner.

The second piece of evidence concerns syllabification. On the assumption that syllable structure is assigned in the course of phonological derivation rather than listed in the lexicon,[19] minimal pairs and quasi-minimal pairs like *mágia* [maː.gi.ʲɔ] 'magic' vs *máglya* [maːg.jɔ] 'stake', *ion* [i.ʲon] 'ion' vs *jön* [jøn] 'come', and *fiola* [fi.ʲo.lɔ] 'phial' vs *fjord* [fjord] 'fjord' cannot be properly syllabified if /i/ and /j/ are underlyingly identical (this putative uniform underlying segment that may surface either as [i] or as [j], depending on the syllabic position it finds itself in, will be symbolised as /I/ from now on). As can be seen from these examples, prevocalic /I/ will be

[19] Of course, in any framework where syllable structure is assumed to be lexically given (cf Szigetvári 2011a, 2011b), this argument becomes invalid. — In the examples that follow, syllable boundaries are indicated by '.' in the transcriptions.

syllabified either as another nucleus (that of the previous syllable) or as an onset: the choice is more or less arbitrary. Although it must be admitted that *jön* and *fiola* are the expected patterns as opposed to *ion* and *fjord*,[20] word medial cases like *mágia* vs *máglya* are strictly unpredictable.[21]

With postvocalic /I/, we find a similar — or even higher — degree of arbitrariness concerning whether it will be a nucleus or a coda: *fái* [faː.ʲi] 'his trees' vs *fáj* [faːj] 'it hurts', *bokái* [bo.kaː.ʲi] 'his ankles' vs *bokály* [bo.kaːj] 'decanter', *estéi* [ɛʃ.teː.ʲi] 'his evenings' vs *estély* [ɛʃ.teːj] 'evening party', *tavai* [tɔ.vɔ.ʲi] 'his lakes' vs *tavaly* [tɔ.vɔj] 'last year', *karai* [kɔ.rɔ.ʲi] 'its faculties/choirs' vs *karaj* [kɔ.rɔj] 'pork chop'. It might be argued that these examples are less than fully convincing, given the morphological boundary in *fái* (etc) vs the lack of boundary in *fáj* (etc). But note that, in addition to the possessive plural marker seen in examples like *fái*, several other suffixes, inflectional and derivational ones alike, also consist of a sole *-i-*, whereas the imperative marker consists of a sole *-j-*, hence it is easy to construct examples in which postconsonantal word final [i] and [j] are in contrast with one another: *tép-i* [teː.pi] 'tears it' vs *tép-j* [teːpç] 'tear!', *tér-i* [teː.ri] 'spatial' vs *tér-j* [teːrɟ] 'turn!', *tör-i* [tø.ri] 'history-dimin.' vs *tör-j* [tørɟ] 'break!'. Given that /I/ would constitute a morpheme in itself in all of these cases, it cannot be claimed that different position in terms of morphological boundaries should be the reason for the difference in syllabification.

Furthermore, pairs like *síel* [ʃiː.ʲɛl] 'ski (v)' vs *ijed* [i.jɛd] 'get frightened' and *leír* [lɛ.ʲiːr] 'put down in writing' vs *lejig* [lɛ.jig] 'as far as a leu (= Romanian currency)' indicate that an /I/ associated to two timing slots can be syllabified either as a branching nucleus ([iː]) or as a pair of syllabic constituents: in particular, nucleus plus onset ([ij]) or onset plus nucleus ([ji]), as the case may be. And finally, the nouns *íj* [iːj] 'bow', *díj* [diːj] 'prize', *szíj* [siːj] 'strap' would contain the common melody /I/ associated to three timing slots and multiple ambiguity would arise as to how to syllabify them:

[20] That is: word initially, if another possible onset consonant is not present, the /I/ will tend to be an onset ([j]) rather than a nucleus ([i]), whereas if there is such a consonant, the /I/ will more readily syllabify as a nucleus than as part of the onset cluster; however, counterexamples like *ion* and *fjord* do occur.

[21] Examples include *ária* [aː.ri.ʲɔ] 'air' vs *árja* [aːr.jɔ] 'Aryan', *kópia* [koː.pi.ʲɔ] 'copy (n)' vs *kopja* [kop.jɔ] 'pike', *Tokió* [to(ː).ki.ʲoː] 'Tokyo' vs *toklyó* [tok.joː] 'young sheep', etc as well as some surface minimal pairs that are, however, morphologically dissimilar, hence not necessarily as unpredictable as the former items are: *variál* [vɔ.ri.ʲaːl] 'diversify' vs *varrjál* [vɔr.jaːl] 'sew!', *pária* [paː.ri.ʲɔ] 'social outcast' vs *párja* [paːr.jɔ] 'its counterpart/a pair of them', *tűri-e* [tyː.ri.ʲɛ] 'whether he tolerates it' vs *tűrje* [tyːr.jɛ] 'he should tolerate it', etc.

'bow' could in principle be *[jiː], *[jij], *[iji], or [ijː] as well (the last version actually does occur as an alternative pronunciation of this word). All these complications are avoided if /i/ and /j/ are segmentally represented in two different ways.

The claim that /j/ is consonantal (ie a liquid) is corroborated by several phonological processes in which it acts as a (consonantal) target, eg *j*-obstruentisation (briefly referred to above) as in *kapj* [kɔpç] 'get!', *férj* [feːrj] 'husband' (Siptár 2001 : 391–393; 2003 : 463–468) and *j*-assimilation as in *moss* [moʃː] (< /moʃ+j/) 'wash!', *rázz* [raːzː] (< /raːz+j/) 'shake!' (Vago 1980 : 36; Siptár 1994 : 254–255), or as a (consonantal) trigger, eg *l*-palatalisation as in *alja* [ɔjːɔ] 'its bottom', *állj* [aːj(ː)] 'stop!' (Siptár & Törkenczy 2000 : 178–182).

Thus, we have a number of good reasons to think that /j/ is a liquid, just like /l/ and /r/. This conclusion, once it is accepted, makes it easier to account for processes in which these three consonants behave in a uniform manner. Such processes include optional nasal assimilation (as in *olyan lassú* [ojɔlːɔʃːu] 'so slow', *olyan rossz* [ojɔrːosː] 'so bad', *olyan jó* [ojɔjːoː] 'so good', cf Siptár & Törkenczy 2000 : 209–210) and liquid deletion (with compensatory lengthening if the vowel involved is originally short, see *ibid* 212–213), a process that is also optional, or rather rate and register dependent. It is true that the latter process does not apply to the three liquids with equal ease, but this need not prevent us from claiming that it is basically the same process. Of the three liquids, the one that gets deleted the most easily is /l/, eg *balra* %[bɔːrɔ] 'to the left', *elvisz* %[ɛːvis] 'carry away', *el kell mennem* %[ɛːkɛːmɛnːɛm] 'I must leave'. The deletion of /r/ as in *egyszer csak* %[ɛt͡ːsɛːʧɔk] 'suddenly' is usually restricted to casual speech, although it occurs even in formal situations in the items *arra* [ɔːrɔ] 'that way', *erre* [ɛːrɛ] 'this way', *merre* [mɛːrɛ] 'which way' (Siptár 1993). Finally, /j/ gets deleted the most readily after (high or mid) front vowels as in *gyűjt* [ɟyːt] 'collect', *szíjra* [siːrɔ] 'to fetters', *mélység* [meːʃeːg] 'abyss', *éjszaka* [eːsɔkɔ] 'night'. But despite these minor asymmetries, the three liquids can be seen as behaving as a class with respect to this process, too.[22]

In sum: Hungarian /j/ is neither a fricative nor a glide: it is a liquid.

[22] Further evidence (dialectal and historical) for the claim that /l r j/ exhibit parallel behaviour in a number of respects is provided by Lőrinczy (1972). Cf also Siptár (2003 : 470) for a potential empirical counterargument and its refutation.

5 Conclusion

In this paper, we discussed some debated issues concerning the palatal consonants of Hungarian. First, although it is true that all of them occur in spontaneous speech relatively infrequently, the exact frequency data are crucially affected by what is being counted in a recorded corpus: underlying segments, surface/taxonomic phonemes, or indeed phonetic segments (sounds). Second, we argued that /c/ and /ɟ/ are not affricates but palatal plosives in this language that may, however, be variably produced in an "affricated" manner, due to obvious physiological factors, under the appropriate circumstances in terms of phonetic environment, stress pattern, rate of articulation (tempo), and/or register (speech style, emphasis, etc). Third, with respect to /j/, we concluded that this segment is not a fricative (as traditionally claimed with respect to Hungarian) but not a semivowel (as currently claimed in several frameworks), either: it is a nonnasal consonantal sonorant, ie a liquid like /l/ and /r/.

REFERENCES

Beke, András, Mária Gósy, and Viktória Horváth. 2012. Gyakorisági vizsgálatok spontán beszédben [Frequency statistics in spontaneous Hungarian speech]. In: Mária Gósy (ed.), *Beszédkutatás 2012* [Speech Research 2012]. Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences. 260–277.

Buizza, Emanuela and Leendert Plug. 2012. Lenition, fortition and the status of plosive affrication: the case of spontaneous RP English /t/. *Phonology* 29 : 1–38.

Cser, András and Tamás Szende. 2002. The question of [j]: systemic aspects, phonotactic position, and diachrony. *Sprachtheorie und germanistische Linguistik* 12 : 27–42.

Dressler, Wolfgang U. and Péter Siptár. 1989. Towards a natural phonology of Hungarian. *Acta Linguistica Hungarica* 39 : 29–51.

Dressler, Wolfgang U. and Péter Siptár. 1998. A magyar nyelv természetes fonológiája felé [Towards a natural phonology of Hungarian]. *Általános Nyelvészeti Tanulmányok* 19 : 35–59.

Geng, Christian and Christine Mooshammer. 2004. The Hungarian palatal stop: Phonological considerations and phonetic data. *ZAS Papers in Linguistics* 37 : 221–246.

Gósy, Mária. 2004. *Fonetika, a beszéd tudománya* [Phonetics, the science of speech]. Budapest: Osiris Kiadó.

Kassai, Ilona. 1982. A magyar köznyelvben nincsenek diftongusok [There are no diphthongs in Standard Hungarian]. *Nyelvtudományi Közlemények* 84 : 395–397.

Kassai, Ilona. 1984. Kell-e a magyar köznyelvben diftongusnak lennie? [Do there have to be diphthongs in Standard Hungarian?]. *Nyelvtudományi Közlemények* 86 : 152–154.

Kassai, Ilona. 1998. *Fonetika* [Phonetics]. Budapest: Nemzeti Tankönyvkiadó.

Kovács, Magdolna. 2002. Az affrikáták időszerkezetéről [On the temporal structure of affricates]. In: László Hunyadi (ed.), *Kísérleti fonetika, laboratóriumi fonológia 2002* [Experimental phonetics and laboratory phonology 2002]. Debrecen: Debreceni Egyetem Kossuth Könyvkiadója. 39–54.

Kylstra, Andries Dirk. 1984. Még egyszer a magánhangzó + *j* kapcsolatról a magyarban [Once more on vowel + *j* combinations in Hungarian]. *Nyelvtudományi Közlemények* 86 : 148–151.

Kylstra, Andries Dirk and Tjeerd de Graaf. 1980. Vannak-e diftongusok a magyar köznyelvben? [Are there diphthongs in Standard Hungarian?]. *Nyelvtudományi Közlemények* 82 : 313–317.

Ladefoged, Peter. 2005. *Vowels and Consonants. An Introduction to the Sounds of Languages.* Second Edition. Oxford: Blackwell.

Ladefoged, Peter and Ian Maddieson. 1996. *The Sounds of the World's Languages.* Oxford: Blackwell.

Lőrinczy, Éva B. 1972. Az *l, r, j* hangok azonos magatartásformái a magyar nyelv bizonyos kételemű mássalhangzó-kapcsolódásaiban [The similar behaviour of *l, r, j* in some consonant clusters of Hungarian]. *Magyar Nyelv* 73 : 20–30

Maddieson, Ian. 1984. *Patterns of Sounds.* Cambridge: Cambridge University Press.

Markó, Alexandra. 2012. Az irreguláris zönge szerepe a magánhangzók határának jelölésében V(#)V kapcsolatokban [The role of irregular phonation in boundary marking in V(#)V clusters]. In: Mária Gósy (ed.), *Beszédkutatás 2012* [Speech Research 2012]. Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences. 5–29.

Menyhárt, Krisztina. 2006. Koartikulációs folyamatok két magánhangzó kapcsolatában [Coarticulatory processes involving Hungarian vowel clusters]. In: Mária Gósy (ed.), *Beszédkutatás 2006* [Speech Research 2006]. Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences. 44–56.

Nádasdy, Ádám and Péter Siptár. 1989. Issues in Hungarian phonology: Preliminary queries to a new project. *Acta Linguistica Hungarica* 39 : 3–27.

Olaszy, Gábor. 2010. Az [i] + V és V + [i] hangkapcsolódások akusztikai elemzése a hiátustöltés magyarázatához [An analysis of [i] + V and V + [i] clusters: Towards an explanation of hiatus resolution in Hungarian]. In: Mária Gósy (ed.), *Beszédkutatás 2010* [Speech Research 2010]. Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences. 76–81.

Olsson, Magnus. 1992. *Hungarian Phonology and Morphology*. Lund: Lund University Press.

Pycha, Anne. 2009. Lengthened affricates as a test case for the phonetics–phonology interface. *Journal of the International Phonetic Association* 39 : 1–31.

Rácz, Péter. 2012a. *Salience in sociolinguistics: A quantitative approach*. PhD Dissertation, Albert-Ludwigs-Universität, Freiburg.

Rácz, Péter. 2012b. Salience in sociophonetics: A case study of Hungarian hiatus resolution. In: Ferenc Kiefer & Zoltán Bánréti (eds.), *Twenty years of theoretical linguistics in Budapest: A selection of papers from the 2010 conference celebrating the twentieth anniversary of the Theoretical Linguistics Programme of Eötvös Loránd University.* Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences. 109–122.

Siptár, Péter. 1993. Marginalia in Hungarian phonology. *Eurasian Studies Yearbook* 65 : 73–84.

Siptár, Péter. 1994. A mássalhangzók [The consonants]. In: Ferenc Kiefer (ed.), *Strukturális magyar nyelvtan 2. Fonológia* [A structural grammar of Hungarian. Vol. 2: Phonology]. Budapest: Akadémiai Kiadó. 183–272.

Siptár, Péter. 2001. Három felemás magyar mássalhangzó [Three asymmetrical consonants in Hungarian]. *Magyar Nyelv* 97 : 385–404.

Siptár, Péter. 2003. Hungarian yod. *Acta Linguistica Hungarica* 50 : 457–473.

Siptár, Péter. 2008. Hiatus resolution in Hungarian: An optimality theoretic account. In: Christopher Piñón and Szilárd Szentgyörgyi (eds.), *Approaches to Hungarian 10: Papers from the Veszprém Conference.* Budapest: Akadémiai Kiadó. 187–208.

Siptár, Péter. 2011. Alakváltozatok, allomorfok, alternációk [Allomorphs and alternations]. *Magyar Nyelv* 107 : 147–160.

Siptár, Péter. 2012a. Tényleg van-e a magyarban degemináció? [Does Hungarian really exhibit degemination?]. In: Alexandra Markó (ed.), *Beszédtudomány: Az anyanyelv-elsajátítástól a zöngekezdési időig* [Speech science: From first language acquisition to voice onset time]. Budapest: Eötvös Loránd University and Research Institute for Linguistics of the Hungarian Academy of Sciences. 19–34.

Siptár, Péter. 2012b. The fate of vowel clusters in Hungarian. In: Eugeniusz Cyran, Bogdan Szymanek, and Henryk Kardela (eds.), *Sound, Structure and Sense. Studies in Memory of Edmund Gussmann.* Lublin: Wydawnictwo KUL. 673–693.

Siptár, Péter and Miklós Törkenczy. 2000. *The Phonology of Hungarian.* Oxford: Oxford University Press.

Szende, Tamás. 1992. *Phonological Representation and Lenition Processes*. Budapest: Research Institute for Linguistics of the Hungarian Academy of Sciences.

Szigetvári, Péter. 1998. Kormányzás a fonológiában [Government in phonology]. *Általános Nyelvészeti Tanulmányok* 19 : 165–213.

Szigetvári, Péter. 2001. Szótagtalan fonológia [Phonology without syllables]. In: Péter Siptár (ed.), *Szabálytalan fonológia* [Phonology without rules]. Budapest: Tinta Könyvkiadó. 37–76.

Szigetvári, Péter. 2011a. Syllable. In: Bert Botma, Nancy C. Kula, and Kuniya Nasukawa (eds.), *Continuum Companion to Phonology.* London and New York: Continuum. 64–94.

Szigetvári, Péter. 2011b. The skeleton. In: Marc van Oostendorp, Colin J. Ewen, Elizabeth Hume, and Keren Rice (eds.), *The Blackwell Companion to Phonology.* Oxford: Wiley-Blackwell. 2963–2989.

Vago, Robert M. 1980. *The Sound Pattern of Hungarian.* Washington DC: Georgetown University Press.

Péter Siptár
siptar.peter@nytud.mta.hu
Research Institute for Linguistics,
Hungarian Academy of Sciences &
Eötvös Loránd University, Budapest

Pszeudo-Kratülosz újratöltve

Szigetvári Péter és Törkenczy Miklós

Az ezredfordulót követő tizenkettedik év telén rossz idők jártak a peripatetikusokra. Poszeidón Khaosszal szövetkezett, és átvették a hatalmat a gümnaszion papúrosz-alapú tanulmányi rendszere fölött. Nagymemóriájú Athilleusz Sztarkheuész, a botcsinálta adminisztratór bomlott elmével, sírva bolyongott az oszlopok között, mert Poszeidónba már görög betűs adatokat sem lehetett bevinni, a busztrophédonról nem is beszélve. Szerencsére viszonylag enyhe volt a tél. Hermogenész és Kratülosz az udvaron sétáltak, ahol melegebb volt, mint a csarnokban, melyet már hetek óta nem fűtöttek, és ahová be sem tudtak volna jutni az anthrakopauza, a szénszünet miatt. Szókratészt várták — meg volt beszélve, hogy a közeli Burger Kingben bekapnak valamit és átgondolják, mit lehet tenni ezekben a nehéz időkben, átalakuljon-e a csarnok halpiaccá, futballklubbá, vagy valami más intézménnyé, amelyre nagyobb szükség van, mint egy ócska gümnaszionra, ahol össze-vissza sétálnak és trécselnek dologtalan és henye peripatetikusok. Szókratész — mint máskor — most sem jött.[1] *Hermogenész és Kratülosz fázni kezdtek és gondolatokkal próbálták melengetni magukat. Nem csoda, hogy hamarosan a fonológiára terelődött a szó. Beszélgetésük fennmaradt és itt olvashatja a hálás utókor.*

HERMOGENÉSZ

De jó, hogy látlak, kedves Kratülosz! Tudod, min szoktam gondolkozni mostanában, amíg itt toporgok és várom, hogy a tunikám elkészüljön a Naiászok katharsisában — hogy is mondjuk? — mosodájában?

KRATÜLOSZ

Gondolom, a fuvoláslányokról, vagy arról, hogy a Moirák mennyivel gyorsabban fonják fonalukat az utóbbi időben.

[1] Lásd Arisztophanész töredékben ránk maradt színdarabját *Perimenontes ton Sókratén* 'Waiting for Socrates' kiadta és angolra fordította S. Beckett (Loeb Classical Library. Cambridge, MA: Harvard University Press; London, William Heinemann Ltd., 1949).

HERMOGENÉSZ

Se nem a Moirákról, de még csak a fuvoláslányokról sem, kedves Kratülosz. Ehelyett azon tűnődöm mostanság, hogy mi a fonológia, pontosabban, inkább azon, hogy meddig is terjed a fonológia. Mi az, ami a hangokkal kapcsolatos és biztosan a fonológiába tartozik és mi az, ami ugyan a hangokkal kapcsolatos, de már, vagy még, nem fonológia, hanem csak fonetika.

KRATÜLOSZ

Különös foglalatosság, Hermogenészem, szerintem jobban tennéd ha mégis inkább a fuvoláslányokon törnéd a fejed, hiszen ez a kérdés ősi toposz, azaz lerágott csont. Ráadásul könnyen meg tudom mondani, melyik-melyik meddig terjed.

HERMOGENÉSZ

Akkor csak mondd, ó Kratülosz, ne csigázd a kíváncsiságomat.

KRATÜLOSZ

Pofonegyszerű, Hermogenészem. Minden úgy van, ahogy azt Vargász, az intonász,[2] a részeges genfi bölcs, Szosszürosz[3] hű követője tanította. A fonológia a nyelv platóni ideájának a része, míg a fonetika nem több, mint a puszta beszéd, levegő molekuláinak részben esetleges tánca. Ennek megfelelően fonetikailag szüntelen és szakadatlan átmeneteket tapasztalunk: a beszédben megjelenő tulajdonságok mindig fokozatosak és mennyiségileg, azaz többé-kevésbé különböznek. A fonológiában, azaz ott, ahol a hangi valóságot az ideák szintjén kódoljuk, ezzel szemben minden fekete vagy fehér, nincsenek fokozatok. Jól mondta Szosszürosz: a nyelvben csak a különbségek számítanak, vagy igen, vagy nem. Szóval, a fonetika fokozatos, a fonológia meg nem az, hanem diszkrét, más szóval kategorikosz.

HERMOGENÉSZ

Bravó, kedves Kratülosz, ezt én is így tanultam a peripatetikus iskolában, de az utóbbi időben megérintett a kétely. Tényleg szükségszerűen így van ez? Hogy a fokozatos fizikai valóságot „kognitívan" kétértékűen képezzük le? Van ennek az egésznek értelme?

KRATÜLOSZ

Naná, hogy van. Képzeld el, kedves Hermogenész, hogy Kithairón erdeiben vadászol és egyszer csak egy csomó meztelenül fürdőző gyönyörű —

[2] Varga László, e kötet ünnepeltje, mindkét szerző tanára, az ELTE professzora, hetven éve született. Boldog születésnapot kívánunk neki!

[3] Szintén kerek évforduló: éppen száz éve hunyt el Ferdinand de Saussure.

egymástól csak a szépség fokozataiban különböző—nőre bukkansz. Vajon nem fontos-e bármelyik ilyen nőalakról *ezt* megállapítanod: „ez Artemisz", illetve „ez *nem* Artemisz"? Igen vagy nem — ez a fontos, ha nem akarod, hogy szarvassá változzál és a saját kutyáid tépjenek szét — a mennyiségi különbségek: igéző—igézőbb—igazán nagyon igéző stb. nem számítanak.

HERMOGENÉSZ

Álljon meg a menet, Kratülosz! Te csalsz: hiszen a széttépetés szempontjából valóban csak ez a binárisz különbség lényeges, de számos más szempont létezik, melyekből igenis fontos kognitívan is regisztrálni a nimfák közötti fokozatos különbségeket is. Ezeket most hadd ne részletezzem, hanem inkább térjünk vissza a fonológia és a fokozatosság kérdéséhez.

KRATÜLOSZ

Térjünk, kedves Hermogenész.

HERMOGENÉSZ

Próbáljunk logikusan gondolkodni, és úgy érvelni, ahogy Szókratész tanított.

KRATÜLOSZ

Aki persze Xanthippé miatt megint nem lehet közöttünk.[4]

HERMOGENÉSZ

Igen, de ez mellékes, barátom. Vissza fonológiához! Gondoljuk át, milyen hangzó jelenségekkel lehetne cáfolni az általánosan elfogadott felfogást, hogy a fonológiának nincs köze a mennyiségekhez, a fokozatokhoz, és egy hangtulajdonságnak csak a meglétét vagy hiányát tudja érzékelni.

KRATÜLOSZ

Cáfolni? Mit kell itt cáfolni? Nincs itt semmi probléma. Vegyük például a zöngésséget. Nem kell ahhoz Zeusz fejéből kipattanni, hogy tudjuk, a zörejhangok (ahogy a barbárok mondják, obstruensek), attól függően, hogy hol helyezkednek el a szóban, többé vagy kevésbé lehetnek zöngések. Például az albioniak, ha jön Arkhimédész új mekhanikosz találmánya, a gépember, azt kiáltják, *robot!*, és ebben jóval zöngésebben ejtik a *b*-t, mint a khitónt jelentő *robe* végén. De ez a különbség fonológiai szempontból teljesen érdektelen, és megjósolható a környezet alaján, ezért mindkét *b*-t ugyanolyan zöngésnek számít; csak az a fontos, hogy ne *p*-t ejtsünk, mert akkor már nem a ruháról, hanem a kötélről, *rope*-ról van szó.

[4] Később kiderült, hogy Xanthippének semmi köze nem volt a dologhoz. Szókratész azért nem jött, mert minden dialogosz nélkül nyugdíjazták és kirúgták a csarnokból.

HERMOGENÉSZ

Na, de kedves Kratüloszom! Honnan tudjuk, hogy fonológiailag tényleg nem három fokozat van, hanem csak kettő, ahogy te mondod?

KRATÜLOSZ

Hát legalább két dologból. Egyrészt van a kötél (a *rope*), meg a ruha (a *robe*), de nincsen egy harmadik jelentésű, nagyon zöngés végű szó. Másrészt pedig az albioniak nyelvében egyetlen olyan szabály sincs, amelyik a zöngésség három fokozatára hivatkozna. Például egy magánhangzó hosszúsága függ az őt követő mássalhangzó zöngésségétől, de független a zöngésség mértékétől. A *robot*ban és a *robe*-ban egyaránt hosszú, a *rope*-ban pedig rövid. Úgyhogy ne kötözködj itten, mert megruházlak. Ruha—kötél, zöngés—zöngétlen, Artemisz—nem-Artemisz, oszt jónapot.

HERMOGENÉSZ

Na jó, kedves Kratüloszom, szinte meggyőztél. Azonban vegyük most a magánhangzók nyíltságát. Ez vajon nem épp az az eset, amikor fonológiailag is fokozatokról van szó? Zárt, félig nyílt, nyílt. Könnyen tudunk olyan példát mondani, ahol ez a három fokozat háromféleképpen viselkedik. Az albioniak nemrotikus törzsének furcsa szokása, hogy különösen iszonyodnak a hiátustól. Annyira nem bírják elviselni, hogy két magánhangzó kerüljön egymás mellé, hogy valamilyen könnyű mássalhangzót illesztenek közéjük. Ez a mássalhangzó azonban az első magánhangzó végének függvényében kétféle lehet. Ha az első magánhangzó vége zárt, akkor *j* vagy *w* (a kerekségétől függően, de ez itt most nem fontos), ha viszont félig nyílt vagy nyílt, akkor *r.* Például *he*[j]*is*, *you*[w]*are*, de *bra*[r]*is*, *law*[r]*and*. . .

Ugyanekkor ennek a törzsnek egy másik barbár tulajdonsága a diftongoszok túlzott szeretete. A hosszú magánhangzóikat makacsul diftongosznak ejtik, ráadásul *r* előtt megtörve (azaz svával kiegészítve) szeretik legtöbbjüket. Például az Erinnüszöket úgy mondják: *Furies* [fjʊəriːz], míg a többi barbár csak *fúria*ként tiszteli őket. Ugyanebben a helyzetben azonban bizonyos diftongoszokat nem törnek meg, főleg manapság — mert ilyen időket élünk! — a fiatalok és az izgékonyak. Például a türannoszt úgy hívják *tyrant* [tajrənt], törés nélkül. Amiket nem törnek, azok éppen a nyílt elejű diftongoszok ([aj], [aw], [oj]), míg amelyiknek félig nyílt vagy zárt az eleje, azt mindenképp törik.

KRATÜLOSZ

Értem, Hermogenészem, tehát szerinted itt a fonológia is három nyíltsági fokozatot lát: Zárt (ami után *j* vagy *w* a betoldott könnyű mássalhangzó, és törik), félig nyílt (ami után *r* toldódik be, és szintén törik), valamint nyílt (ami után szintén *r* toldódik be, de nem törik).

HERMOGENÉSZ

Fején találtad a szöget, pontosan ez a gondolat űzi el elmémből a nimfákat és a fuvoláslányokat.

KRATÜLOSZ

Na de kedves Hermogenészem, még ilyen űzötten is beláthatod, hogy ez nem stimmel. Jól látszik, hogy nem egyetlen többfokozatú skáláról van szó, hanem két kétértékű tulajdonság kombinációjáról. A mássalhangzóbeillesztő szabály a zárt—nem-zárt különbségre hivatkozik, a törés szabálya pedig a nyíltak és nem-nyíltak között tesz különbséget. A skaláris jelleg tehát csak látszat. Jól gondolta az isteni Jakobszonosz, az Ókeánoszon túli Hállész és a Thulén túli Fantosz,[5] hogy a magánhangzók nyíltsági skálája két binárisz jegy, a zárt és a nyílt összejátszásából adódik.

HERMOGENÉSZ

Valóban. Talán mégis ilyen egyszerű a dolog. De Szókrátész mesterünk kedvéért, legyünk mégis szkeptikoszok. Milyen lenne egy igazi fonológiai skála? Nyilván *ugyanannak* a szabálynak kellene kettőnél több fokozatot megkülönböztetnie. Vajon tudunk-e ilyen jelenségeket találni?

KRATÜLOSZ

Mit szólnál például a szonoritászhoz? Azt kifejezetten skálákban szokták elképzelni.

HERMOGENÉSZ

Mondjál példát, kedves Kratüloszom, hogy tompa elmémbe bebocsátást nyerhessen gondolatod!

KRATÜLOSZ

Gondolj például a szótageleji mássalhangzókapcsolatokra.

HERMOGENÉSZ

Szótag? Miket nem mondasz, nem az derült ki a legutóbb Szteriadészünk útmutatása nyomán, hogy ilyen nincsen, ez is csak látszat?[6]

KRATÜLOSZ

Nem éppen. De legyen neked igazad, beszéljünk inkább a *szó* eleji mássalhangzókapcsolatokról. És tekintsünk el—az összeférhetetlen Káyosz mes-

[5] Roman Jakobson, C. Gunnar M. Fant, and Morris Halle. 1961. *Preliminaries to Speech Analysis: The Distinctive Features and Their Correlates.* Cambridge, MA: The MIT Press.

[6] Szigetvári Péter és Törkenczy Miklós. 2006. Pszeudo-Kratülosz, In: Kálmán László (szerk.) *KB 120: A titkos kötet. Nyelvészeti tanulmányok Bánréti Zoltán és Komlósy András tiszteletére,* Budapest: MTA Nyelvtudományi Intézet/Tinta Könyvkiadó. 263–275.

ter tanácsa alapján[7] — az *sz*+mássalhangzó kapcsolatoktól. Ugye előtted van a szonoritászi hierarchia?

HERMOGENÉSZ

Alattam talán.

(1) *Szonoritási hierarchia*

index	példák
⚅	magánhangzók: ε η ο ω α
⚄	siklóhangok: ι υ
⚄	folyékonyhangok: λ ρ
⚃	orrhangok: μ ν
⚂	réshangok: σ
⚁	zárhangok: π τ κ β δ γ φ θ χ

KRATÜLOSZ

Na akkor láthatod, hogy ez egy skála. És a fonológia távolságokat mér rajta. Például mi már eljutottunk oda, hogy egy szó elején bármilyen mássalhangzó kapcsolatot jónak tartunk, ha az első tagja nincs feljebb a skálán a másodiknál (ld. (2a)). A már sokat emlegetett albioni barbárok megrekedtek ott, hogy csak egymástól bizonyos távolságban levő mássalhangzókat engednek: zárhang—réshang, de még csak zárhang—orrhang se fordulhat elő náluk, csak zárhang—folyékonyhang, vagy zárhang—siklóhang (ld. (2b)). A barbár itáliaiak, akik csak az áriázáshoz és a peckes masírozáshoz értenek igazán, még ennél is fejletlenebbek: ők csak a zárhang—siklóhangot engedik ebben a helyzetben (ld. (2c)).[8]

(2) a. Ptolemaiosz, pszükhé, pneuma, Platón, pragma
b. play, pray, p[j]ure
c. prego, p[j]azza

HERMOGENÉSZ

Ez valóban érdekes. De nem lehet, hogy itt csak a második tag megszorításairól van szó? Nincs itt semmiféle távolság. Egyszerűen az albioniban a második helyen nem állhat orrhang, vagy az alatti. Merthogy a réshangok után ugyanaz állhat, mint a zárhangok után.

[7] Jonathan Kaye. 1992. Do you believe in magic? The story of s+C sequences. *SOAS Working Papers in Linguistics and Phonetics* 2 : 293–313.

[8] Az albioniaknál és az itáliaiaknál fonológiailag a *r* is siklóhangnak számít.

(3) fly, fry, f[j]ew

KRATÜLOSZ

Hát akkor ezt a skálát is elvethetjük. Na van még ötleted? Vagy feladod végre?

HERMOGENÉSZ

Héraklész sem adta fel pusztán azért, mert nehéz volt megverekedni a nemeai oroszlánnal. Hopp, már van is egy ötletem: nézzük a nemlétező szótagok súlyát. . .

KRATÜLOSZ

Nézzük, barátom. Miért érdekes a szótagok súlya?

HERMOGENÉSZ

Tudvalevő, hogy a szótagok súlyára érzékeny emberek nyelvében (mint a miénkben is) a szótagok nehezek vagy könnyűek lehetnek és a fonológiai szabályok erre a különbségre hivatkozhatnak is.

KRATÜLOSZ

Tudvalevő, tudvalevő, Hermogenészem, de nem éppen a skálák elleni érv kerekedik ebből a szótagsúlyból, ha a szabályok csak erre a binárisz különbségre hivatkoznak?

HERMOGENÉSZ

Ne kapkodj, Kratülosz, mint Léda a hattyúhoz: csak várd ki a végét! Vannak olyan nyelvek, melyekben a szótagsúlynak nem csak két fokozata van. Az Ókeánoszon túl lakó barbár klamászok furfangos módját ötlötték ki a szóhangsúly kijelölésének: a szó utolsó hosszú magánhangzóját szeretik megnyomni, de ha nincs hosszú magánhangzó a szóban, akkor az utolsó előtti szótagot mondják erősebben, de csak akkor, ha az zárt — ha viszont nincs hosszú magánhangzó a szóban *és* az utolsó előtti szótag nyílt, akkor kétségbeesésükben az utolsó előtti előtti szótagot hangsúlyozzák, ahogy a barbár itáliaiak mondanák, az antepenultimát.

KRATÜLOSZ

Miért érdekes, hogy pucér barbárok mit mikor nyomnak Héraklész oszlopain túl?

HERMOGENÉSZ

Azért Kratüloszom, mert az elmés klamászok — bár valóban nem öltöznek olyan válaszékosan, mint mi — a szótagsúlynak három fokozatát különböztetik meg: a hosszú magánhangzós szótagok a legnehezebbek, a rövid magánhangzós nyílt szótagok a legkönnyebbek — a rövid magánhangzós

zárt szótagok pedig e két véglet között helyezkednek el. Mi több, a hangsúlykijelölés szabálya (tehát egy és ugyanazon szabály) érzékeny ezekre a fokozatokra: a lehető legnehezebb szótagra akarja tenni hangsúlyt — az már részletkérdés, hogy ha ez a legnehezebb fajta, akkor akárhol lehet (ld. (4a–c)), csak legyen a legutolsó a szóban, ha nem a legnehezebb, akkor pedig az utolsó előtti szótagban kell megkeresni (ld. (4d–f), Hayes 1995 : 279–280).[9]

(4) a. n'isq'á:k 'kislány'
b. claga:mó:la 'befejezi a darálást'
c. čat'á:wipga 'ül a napon'
d. gatbámbli 'hazatér'
e. čáw'iga 'bolond'
f. ʔápʔota 'megígér'

KRATÜLOSZ

Kedves Hermogenészem, lehet, hogy igazat fogok neked adni?

HERMOGENÉSZ

Hát remélem! A következő jutott még az eszembe. Az Ister-menti barbárok különös szokása, hogy a szavakhoz kisebb darabkákat ragasztgatnak és ilyen játszi módon változtatgatják azok jelentését.

KRATÜLOSZ

Azért ez aligha — hogy is mondják arrafelé? — hungarikum, ilyet már sok népnél megfigyelhettünk. Nem is olyan barbár dolog ez, hisz *mértékkel* még mi magunk is élünk vele.

HERMOGENÉSZ

Igen, de ezek az Ister-mentiek a darabkák alakjait aszerint módosítják, hogy éppen milyen tőhöz ragasztották azokat. Ha a tő magánhangzója mély, akkor a darabkákat is ilyen alakjukban ragasztják, ha magas, akkor a magas alakjukban. Így aztán a szümposzionjaikon vágynak a *húsra*, a sörből viszont csakis a *hűsre.*

KRATÜLOSZ

Micsoda barbár szokás! Bár el kell ismerni, harmonikus eredményre vezet. Nevezzünk magunk között, mondjuk, magánhangzó-harmóniának. Nade

[9] Bruce Hayes. 1995. *Metrical Stress Theory: Principles and Case Studies.* Chicago: The University of Chicago Press.

csak nem azt akarod mondani, hogy a magason és a mélyen kívül másféle magánhangzók is előfordulnak?

HERMOGENÉSZ

Nem, nem erről van szó. Hanem arról, hogy bizonyos magánhangzók, az *i* meg az *é* semlegesen viselkednek a harmónia szempontjából, áteresztik azt magukon, mint Bakkhosz a jó bort.

KRATÜLOSZ

Van ilyen. Akkor tehát az *i* meg az *é* olyan, mintha se mély, se magas nem lenne. Jól gondolom, Hermogenészem?

HERMOGENÉSZ

Így is mondhatjuk, *i* meg *é* után ugyanis a darabkák ilyenek is, olyanok is lehetnek—*vízre, hídra, félre, célra*—bár azért ennél kicsit szünthetikoszabb a dolog. De térjünk vissza az eredeti ösvényünkre. Az *i* meg az *é* tehát áthereszti a harmóniát, vagyis ha haragszanak a másikra elküldhetik akár a *búsba,* akár a *sunyiba* vagy a *ganyéba* is.

KRATÜLOSZ

Jó, jó, de ebből még semmi szkalaritász nem következik, csak azt tudtuk meg, hogy ezek a barbárok micsoda helyekre küldik el egymást.

HERMOGENÉSZ

Csakhogy a barbár Ungaroszok, egyszer egy nagy, de lelkileg labilis költőjük elméjét akarták megvizsgáltatni és voltak akik így szóltak hozzá: „Menj *analízisbe!*" Mások meg ezt mondták: „Menj *analízisba!*"

KRATÜLOSZ

Nem értem, hogy ez miért tartozik ide. Össze-vissza kóborolsz érvelésedben, mint Thészeusz a knosszoszi labürinthoszban! Bökd már ki mire gondolsz!

HERMOGENÉSZ

Csodálom, hogy nem vetted észre: arról van szó, hogy az *analízis* szóhoz tett darabkában magas és mély is lehet a harmónia!

KRATÜLOSZ

Talányos vagy, mint a Szphinx. Ismét megkérdezem: mi köze ennek a skálákhoz?

HERMOGENÉSZ

Csak annyi, Kratüloszom, hogy ez a fakultativitás csak akkor áll elő, ha több mint egy semleges magánhangzós szótag követ egy mély magán-

hangzósat a darabka előtt. Ha csak egy van, a darabka kötelezően mély kell hogy legyen: a *sunyiba* nem lehet **sunyibe* is.

KRATÜLOSZ

Értem már — és eddig csak fújtattam, mint a krommüóni vademse! Azt akarod mondani, hogy minél több neutrális magánhangzó ékelődik a mély magánhangzó és a darabka közé, annál kevésbé eresztik át a harmóniát.

HERMOGENÉSZ

Bravó, kedves Kratülosz. Pontosan ezt akartam mondani. És ez nagy baj a kétértékűség szempontjából, hiszen úgy tűnik, hogy még a fonológiai lokalitász is lehet fokozatos és ez ellentmond annak, amit az isteni Noász Khomszkisz és Morrhisz Hallész tanítottak.[10]

És ha mindez nem lenne elég, még azt is hozzátehetjük, hogy sokszor azt is számításba kell venni, gyakran használják-e az adott kifejezést a beszélők, vagy csak néhanapján. Sőt az is számít, hogy egy hangsorozat sok szóban szerepel-e és hogy azok a szavak gyakran előfordulnak-e a beszédben, vagy csak ritkán. Például a már emlegetett albioniaknál a [ð] hang kevés szóban fordul csak elő, de azok között nagyon gyakoriak vannak, teszem azt, a határozott névelő. A gyakoriság pedig nagyonis fokozatos jelenség.

KRATÜLOSZ

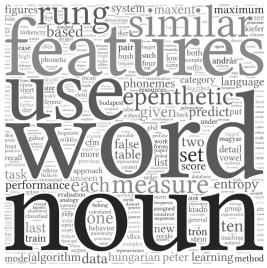
Már teljesen összezavarodtam, kedves Hermogenészem. Most, akkor számíthatnak is a fokozatok, meg nem is számíthatnak. De mikor melyik?

HERMOGENÉSZ

Ki tudja, Kratüloszom... Van ugyan elképzelésem arról, mit mondana erre Kálmász, az analógosz, vagy Rhebrosz, a lusta bölcs, de mégis inkább azt javaslom, térjünk vissza a nimfákhoz. Elég lesz, ha arról megbizonyosodunk, hogy Artemisz nincs közöttük.

Szigetvári Péter és Törkenczy Miklós
szigetvari@elte.hu
tork@nytud.hu
Eötvös Loránd University
Budapest

[10] Noam Chomsky and Morris Halle. 1968. *The Sound Pattern of English.* New York: Harper & Row.



Identifying Epenthetic Nouns using Maximum Entropy Classification

Gábor Recski and András Rung

1 Introduction

This paper will demonstrate the use of a generic machine learning algorithm in predicting a particular morphological behavior exhibited by a group of Hungarian nouns. *Epenthetic nouns* (eg *bokor* 'bush') appear without the last vowel phoneme under certain conditions (*bokr#ok* 'bush-PLUR', *bokr#ot* 'bush-ACC'). Rule-based accounts of this phenomenon, whether generative (Vago 1980, Törkenczy 1994) or traditional (Papp 1975, Elekfi 1994), do not enable us to predict the behavior of new, unseen words. More recently, Rebrus & Törkenczy (2008) have explored the effects that previously attested noun forms may have on the the behavior of new stems, but without providing an algorithm for predicting the behavior of unknown words.

The methods described in this paper make no use of linguistic analyses put forward in the literature. On the contrary, we wish to demonstrate that given a sufficiently large data sample it is possible to predict the behavior of unseen nouns with high accuracy while using minimal linguistic knowledge. In §2 we give a brief account of an analogy-based approach put forward by (Rung 2012). This approach limits phoneme representations to a small set of phonetic features and makes use of a fairly sophisticated measure of word similarity, called the *complex feature measure*. §3 will use the same data and the same representation to train a Maximum Entropy classifier that predicts epentheticity without adopting any notion of phonetic similarity. For both experiments we use a dataset containing ca. 1000 epenthetic and 48 000 non-epenthetic nouns. The sample was compiled using the *morphdb.hu* morphological database (Trón et al. 2006), the annotation was manually improved (see Rung 2012 for details).

2 Analogy-based approaches and the complex feature measure

The first method for predicting epenthetic behavior of nouns is based on similarity of words. Given some training data, ie a database of nouns whose status is known, the algorithm will assume that new, unseen words behave as their closest neighbor in the training set. Details of the algorithm are given in (Rung 2012), we will only summarize the most important characteristics of the system.

Similarity is measured based on the feature representation of phonemes in each word. Vowels are represented by the binary features HIGH, LOW, LONG, SHORT, FRONT, BACK, ROUND, UNROUND, consonants by AFFRICATE, ALVEOLAR, APPROXIMANT, BILABIAL, CONTINUANT, CORONAL, DORSAL, FLAP, FRICATIVE, GLOTTAL, LABIAL, LABIODENTAL, LATERAL, NASAL, OBSTRUENT, PALATAL, PLOSIVE, RHOTIC, SPREAD GLOTTIS, STOP, VELAR, VOICED, VOICELESS. The selection of these features was based on descriptions by Kiefer (1994) and Siptár & Törkenczy (2000).

In order to choose, given some unseen word, the one most similar to it in the training data, an exact metric of similarity must be given. Rung's metric, the *Complex Feature Measure* compares two words by aligning their phonemes, starting by the last one, and measuring differences between phoneme pairs. Each articulatory feature the two phonemes do not share reduces their similarity by a factor of 2: identical phoenemes have a similarity of 1, those differing in one feature have similarity 0.5, etc. Similarity between a vowel and a consonant is zero. Word similarity is calculated as the weighted average of phoneme similarities, where phoneme pairs contribute less as we get further from the right edge of the stem (details are given in Rung 2012). Given some unseen word, its distance from all words in the sample data is calculated and the category of the nearest neighbor is assigned to it. Performance of the algorithm was further improved with one tweak: words whose last four characters do not match the CV pattern of the word under examination are left out of the comparison (unless no word matches).

3 The Maximum Entropy approach

3.1 Maximum Entropy Learning

We will now attempt to use a more general machine learning approach that is widely used in various classification tasks, both within and outside the domain of natural language processing. Maximum Entropy (or *maxent* for

short) is a widely used, general algorithm for supervised learning. Given some set of events (in our case, words), each of which are represented by a finite set of features (eg phonetic ones), and each of which are assigned one of finitely many categories or *outcomes,* eg whether they are epenthetic or not, maximum entropy learning will produce a model that assigns scores to each *(feature, outcome)* pair that describe the contribution of the feature to the likelihood of the word belonging to the category. When confronted with new, unseen words, the model will thus determine the probability of each category based on its features. The mathematical details are discussed in Ratnaparkhi (1998).

Any application of Maximum Entropy learning to some classification task will involve establishing a set of features used to represent the entities that are to be classified, all of which encode information that might be relevant to the classification task. It is then up to the algorithm to determine, by assigning weights, which of these features are more important than others. Applying the maxent method to the identification of epenthetic nouns simply means generating features for each word and feeding the representations to the maxent learner.

3.2 Features

When choosing features to encode words for the current task, we limited our representation to the set of phonetic features used by the algorithm described in the previous section. Since the maxent method can efficiently handle tens of thousands of word features, the majority of which are probably irrelevant to the categorization task, it is feasible to represent each word with thousands of features. Working on the minimal assumption that epentheticity somehow depends on the rightmost phonemes of a word and that it is sensitive to particular sequences of phonetic properties, we decided to create word features by considering a suffix of arbitrary size and generating all *feature sequences* present in the suffix.

In our experiments we found it optimal to consider suffixes of length 5 and sequences of at most 4 features. For example, the word *kereskedelem* will receive features such as -4_0_VOWEL_CONSONANT_VOWEL_CONSONANT, which simply indicates that the word ends in a VCVC sequence, but also every possible combination of phonetic features that these last four phonemes have, such as -4_0_UNROUND_CONSONANT_FRONT_VOICED. In fact, the word *kereskedelem* will be represented by 2430 distinct features.

4 Evaluation

4.1 Methodology

In order to evaluate the system, we used the standard method of *tenfold cross-validation.* We divided the entire data (49 466 nouns) into ten random parts of equal size and performed ten independent experiments: in each run, we used nine sets to train a model which we then used to predict the categories of words in the last tenth of the data. We then average the ten scores to obtain overall figures of merit. The standard method for measuring classifier performance are the three figures known as *precision, recall,* and *F-score*: given a dataset of N words, n of which belong to a category under evaluation, K of which were classified as belonging to this category, k of which were correctly classified, precision and recall will be calculated as k/K and k/n respectively. Neither of these two figures alone can adequately measure the performance of a system: a model that predicts every noun in a corpus to be epenthetic will achieve 100% recall, while the converse model that tags no noun as epenthetic will achieve 100% precision. It is therefore customary to calculate the harmonic mean of the two figures (2PR/(P+R)), the F-score, to measure general performance.

4.2 Results

Table 1 lists figures of merit for the best model along with the figures obtained using the complex feature measure approach described in the previous section. Both methods have been evaluated using tenfold cross-validation, standard deviation figures are also available for the current experiment. Since most nouns that have been incorrectly tagged by either system have relatively low frequency, we also calculated, based on frequency information from the Szószablya Webcorpus (Halácsy et al. 2004), precision and recall figures based on token frequency (table 2).

table 1: Performance measured on types

	#epenthetic	false pos	false neg	precision	recall	F-score
CFM	107.8	3.1	1.4	97.17%	98.70%	97.79
maxent	107.5	3.3±1.56	2.1±4.2	96.96%±1.46%	98.05%±1.26%	97.50%±1.17

table 2: Performance measured on tokens

	#epenthetic	false pos	false neg	precision	recall	F-score
CFM	10.87m	7.41k	.71k	99.932%	99.994%	99.956
maxent	10.87m	20.16k±26.25k	2.23k±1.9k	99.82%±9.27%	99.98%±1.41%	99.90±6.63

Finally in tables 3 and 4 we also list the most frequent errors made by the system, divided into two groups: false positives (nouns incorrectly tagged as epenthetic) and false negatives (epenthetic nouns that weren't recognized as such).

table 3: Frequent mistakes of the maxent tagger

false positives	
meleg	110182
török	59266
menedzser	13012
észak	6468
üstökös	2505
false negatives	
átok	7225
vétek	2635
karom	2568
iker	1675
járom	1602

table 4: Frequent mistakes of the CFM tagger

false positives	
török	59266
donor	2328
sógor	1594
pacal	1342
vigyor	1222
false negatives	
iker	1675
lator	1257
kölök	1068
takony	642
berek	537

5 Conclusion

Hungarian epenthetic nouns have been studied in great detail. Recently, they have served to demonstrate the role of analogy in the production of individual word forms. Previous work has shown that automatic prediction of epenthesis is possible based on similarity of phonemes in noun stems. We created a system that uses a generic machine learning algorithm, has no explicit notion of similarity, and relies only on the most basic assumptions about what is relevant to the phenomenon. The system's performance is comparable to previous, more task-specific algorithms, demonstrating that simple machine learning tools with no specific linguistic component can treat the vast majority of cases adequately.

REFERENCES

Elekfi, László. 1994. *Magyar ragozási szótár* [Dictionary of Hungarian Inflections]. Budapest: MTA Nyelvtudományi Intézet.

Halácsy, Péter, András Kornai, László Németh, András Rung, István Szakadát, and Viktor Trón. 2004. Creating open language resources for Hungarian. In: *Proceedings of Language Resources and Evaluation Conference (LREC04).* European Language Resources Association.

Kiefer, Ferenc (ed.). 1994. *Strukturális magyar nyelvtan 2. Fonológia* [Structural Grammar of Hungarian 2. Phonology]. Budapest: Akadémiai Kiadó.

Papp, Ferenc. 1975. *A magyar főnév paradigmatikus rendszere* [The Hungarian Noun Paradigm]. Budapest: Akadémiai Kiadó.

Ratnaparkhi, Adwait. 1998. Maximum Entropy Models for Natural Language Ambiguity Resolution. PhD dissertation, University of Pennsylvania.

Rebrus, Péter and Miklós Törkenczy. 2008. Morfofonológia és a lexikon [Morphophonology and the Lexicon]. In: Ferenc Kiefer (ed.), *Strukturális Magyar Nyelvtan 4. A szótár szerkezete.* Budapest: Akadémiai kiadó. 683–786.

Rung, András. 2012. Magyar főnévi alaktani jelenségek analógiás megközelítésben. [An Analogy-based Approach to Hungarian Noun Morphology]. PhD dissertation, Eötvös Loránd University, Budapest.

Siptár, Péter and Miklós Törkenczy. 2000. *The Phonology of Hungarian.* Oxford: Oxford University Press.

Törkenczy, Miklós. 1994. A szótag [The Syllable]. Kiefer 1994 : 273–392.

Trón, Viktor, Péter Halácsy, Péter Rebrus, András Rung, Péter Vajda, and Eszter Simon. 2006. Morphdb.hu: Hungarian lexical database and morphological grammar. In: *Proceedings of 5th International Conference on Language Resources and Evaluation.* European Language Resources Association.

Vago, Robert M. 1980. *The Sound Pattern of Hungarian.* Georgetown University Press. Washington.

Gábor Recski and András Rung
recski@sztaki.hu
Research Group for Human Language Technologies, Computer and Automation Research Institute, Hungarian Academy of Sciences

The hypercorrect key witness

Nóra Wenszky and Attila Novák

1 Introduction

In the course of two projects[1] of the Research Institute for Linguistics of the HAS, morphologically annotated searchable corpora were created from surviving Hungarian texts dating from the 12th c. to the middle of the 18th c. The morphological analyzer software used in both projects is a modified version of the Humor Hungarian analyzer (Novák 2003) created originally to analyze present-day standard written Hungarian. In order that the program could be used to create a morphological annotation of the texts, they had to be normalized, ie the extremely varied orthography of the texts had to be made uniform. In the course of this process, orthographical and dialectal phonetic variation was neutralized, but morphological variation was kept. Normalization and analysis is illustrated in (1).[2]

(1) *Normalization*

original text	hōti	utan	vallia,
normalized text	hite	után	vallja:
stems	hit	után	vall
analysis	N.PxS3	PP	V.S3.Def

Owing to the great variety of texts, normalization proved to be a challenging task. Normalization of words containing inessive *-ban/ben* (bAn) and illative *-ba/be* (bA) suffixes posed a special problem, as these two suf-

[1] Hungarian generative historical syntax [OTKA NK78074], Morphologically analysed corpus of Old and Middle Hungarian texts, representative of informal language use [OTKA 81189].

[2] For a list of abbreviations, see the Appendix.

fixes have been for long neutralized in speech and their orthography also frequently overlapped in the past (Németh 2008). This essay is a case study, which shows how the normalization of words with the suffixes *-bAn* or *-bA* was achieved in a way that made it possible to estimate to what extent different approaches to normalization could possibly have distorted the original data.

The structure of our essay is as follows. First, the distribution and usage of *-bAn* or *-bA* in present-day Hungarian is discussed, with special emphasis on the discrepancy between written and spoken language. Second, the problems raised by these two suffixes in Old and Middle Hungarian texts are described in detail. This is followed by a discussion of what other authors say about the history of the orthography of *-bAn/bA.* Then the results of the analysis of the orthography of *-bAn/bA* in a corpus of Old and Middle Hungarian texts are presented, which if followed by a summary.

2 Present-day Hungarian

In the course of normalization, the original texts were rewritten according to present-day orthographic rules. Therefore, it is indispensable to review the synchronic situation of inessive and illative case marking.

2.1 Locative cases

Similarly to some other Uralic languages, Hungarian has a system of locative cases which exhibit a three-way contrast — a separate class of case endings and postpositions is used for marking location, point of origin or target of motion.[3] The same system applies to temporal location, beginning or endpoint of events. A part of this system refers to inner relations: the suffixes *-bA* 'into', *-bAn* 'in' and *-bÓl* 'out of' represent the illative, inessive and elative case respectively. Their usage is illustrated in (2). Elative case is irrelevant for our further discussion.

(2) *Locative case, inner system*
  a. illative: *-ba/be* 'into'
    Be-ment-em a mozi-ba/kert-be.
    into-go.PAST-1SG the cinema-ILL/garden-ILL
    'I went into the cinema/garden.'

[3] Many Uralic languages also distinguish path of movement as a fourth type of relation. Hungarian uses locative cases (primarily superessive) and locative postpositions for this kind of relation.

b. inessive: *-ban/ben* 'in'
A mozi-ban/kert-ben túl meleg volt.
the cinema-INE/garden-INE too hot be.PAST
'It was too hot in the cinema/garden.'
c. elative: *-ból/ből* 'out of'
Ki-jött-em a mozi-ból/kert-ből.
out-come.PAST-1SG the cinema-EL/garden-EL
'I came out of the cinema/garden.'

In addition of their spatio-local and temporal meaning, these suffixes are also used to mark oblique arguments of verbs in a more or less idiomatic manner:

(3) *Oblique arguments*
a. hisz valami-**ben**
believe something-INE
'believe in something'
b. bízik valaki-**ben**
trust somebody-INE
'trust somebody'
c. kerül valamennyi-**be**
cost some-ILL
'cost some amount (of money)'

In addition to these idiomatic uses of the suffixes, there are also lexicalized adverbs, postpositions and verbal prefixes that etymologically contain one of these suffixes, like *abba(hagy)* 'stop/give up', *elébe* 'in front of—as direction', *hiába* 'in vain', *általában* 'usually, in general', *mostanában* 'nowadays, recently' etc.

2.2 Written and spoken language

In present-day Hungarian, spoken and written language considerably differ regarding the distinction of *-bAn* and *-bA*. While inessive is marked by *-bAn* and illative by *-bA* in writing as shown in (2) above, and failure to do so is stigmatized, both suffixes are generally realized as *-ba/be* in speech, ie the suffix-final *-n* tends to be dropped in inessive. Note that final *n*-dropping is strictly limited to instances of the *-bAn* suffix. Other word final *n*-s are never dropped even if the word happens to end in *-ban/ben*. Eg final *n* of *szebben* 'in a nicer manner' is never dropped even in casual speech—it is part of a different suffix, the essive-modal *-An*. However, lexicalized ad-

verbs etymologically containing the *-bAn* suffix (like, eg *akkoriban* 'at that time', *általában* 'usually') do undergo final *n*-dropping.

Another process, *n*-insertion is also witnessed in speech. In sporadic cases the *-bAn* form is used instead of the illative *-bA*, which is a case of hypercorrection. This, in contrast to *n*-dropping, is stigmatized in speech as well. The situation is summarized below in (4).

(4) -bAn *and* -bA *in present-day Hungarian*

	written	spoken
inessive	-ban/ben	-ba/be ∼ -ban/ben
illative	-ba/be	-ba/be (∼ -ban/ben)

How wide-spread are *n*-dropping and hypercorrection in actual language use? In a representative survey named Hungarian National Sociolinguistic Survey (HNSS, Kontra 2003), the usage of *-bAn* and *-bA* was examined among other phenomena. The 832 subjects were asked to decide whether sentences read out by the interviewer are correct or not. In another type of question printed sentences had to be corrected by the subjects. It turned out that approximately 60% of subjects regarded sentences with *-bA* for inessive correct, both in the spoken and the written judgment tests. Furthermore, half of the instances of hypercorrect *-bAn* for illative were also deemed correct. People living in Budapest tended to conform to the (written) standard the most in the test, but even in their case approximately half of the non-standard forms were regarded as correct.

Another sociolinguistic survey, the Budapest Sociolinguistic Interview, (BUSZI, Váradi 2003) collected data from people living in Budapest at the end of the 1980's. This survey featured grammaticality judgments, elicited spoken production (eg the completion of sentences), reading aloud and spontaneous speech in directed interviews. Certain test situations were explicitly designed to test *-bAn/bA*. There is remarkable discrepancy between the picture the grammaticality or properness judgments show and the data that we get querying the spontaneous speech data recorded during the interviews that was later painstakingly transcribed and recently made available as a searchable database.

In contrast to what seems to be suggested by the results found in the HNSS, the BUSZI spontaneous speech data show that while informants dropped the *-n* of *-bAn* twice as often as they pronounced it, hypercorrect use of *-bAn* instead of *-bA* is practically nonexistent in the corpus. There were informants who could very reliably judge both *n*-dropping and hypercorrect *n*-insertion as nonstandard usage (indicating that they would

have no difficulty at all producing standard written Hungarian consistently distinguishing inessives and illatives), while performing *n*-dropping in 90% of the cases in spontaneous speech.

Access to the BUSZI data has recently been made possible for any researcher wishing to examine it, and we applied for an account to get real-world data concerning contemporary spoken use of *-bAn/bA.* Due to the lack of necessary categorial distinctions, it is difficult to query the BUSZI data for lexicalized cases of *-bA/bAn* final words, thus we restricted our queries to cases where the word contained an actual illative or inessive case ending. Considering only these cases, we get the following results for the BUSZI-2 spontaneous speech data.

In (5), columns bAn and bA mark uses of the corresponding suffixes conforming to the written standard, ie *-ban/ben* for inessive and *-ba/be* for illative. Columns bA' show results for *n*-dropping, while columns bA'n show occurrences of hypercorrect *-bAn.* Columns INE and ILL show the frequency of inessive vs illative, ie this is the ratio we would find in a version of the texts written in standard orthography.

(5) -bAn *and* -bA *in BUSZI-2 spontaneous speech corpus*

BUSZI-2	bAn	bA'	bA	bA'n	sum	bAn	bA'	bA	bA'n	INE	ILL	BAN	BA	STD	NSTD
all case data	1605	2168	1234	5	5012	0.32	0.43	0.25	0.00	0.75	0.25	0.32	0.68	0.57	0.43
informers	874	1596	881	4	3355	0.26	0.48	0.26	0.00	0.74	0.26	0.26	0.74	0.52	0.48
field workers	731	572	353	1	1657	0.44	0.35	0.21	0.00	0.79	0.21	0.44	0.56	0.65	0.35

The results show that inessive is about three times as frequent as illative. As we shall see looking at the results for historic texts, we find a similar ratio there even when including lexicalized adverbs, postpositions and verbal prefixes in addition to productively case marked words in the analysis. In contrast, as we see in the BAN and BA columns, the *-bA* suffix form is used three times as frequently in casual speech as *-bAn.* The bA'n column shows that hypercorrection is extremely rare in the BUSZI spontaneous speech data. A probable explanation for this is that while *n*-dropping is not stigmatized in speech, hypercorrection is, thus speakers can safely avoid using *-bAn* in situations they are not sure about.

Mátyus and her colleagues have examined how different socio-cultural factors influence *n*-dropping (Mátyus et al. 2010) and found that people without a degree tend to drop more *n*'s than people with a degree. Mátyus (2009) also points out that the presence of *n*-dropping also depends on the exact function of *-bAn*: the final consonant is dropped most often in words used as an adverb of place (ie in the least oblique cases).

3 A normalization problem

Although present-day spoken and written language marks inessive and illative in a different way, the standard marking of these case endings in writing only causes problems in the first years of schooling for most Hungarians. However, as manuscripts form the Old (13th c.–1526) and Middle Hungarian (1526–1772) era show, the orthography of these suffixes has not been uniform for several hundreds of years and seems to have been a problem for many authors.

In order to make automatic morphological annotation of the corpora of Old and Middle Hungarian texts possible, all texts were manually normalized to present-day orthography. In the course of this process, orthographic and dialectal variation was neutralized, but the identity of morphemes was kept.

The suffix pair inessive *-bAn* and illative *-bA* posed a special problem, as the shortened form of the inessive suffix is identical to the illative suffix, and the hypercorrect form of the illative suffix is identical to the inessive suffix. So the two distinct suffixes have identical allomorphs. As discussed above in §2, this *-bAn*∼*-bA* alternation is extensively present in present-day spoken Hungarian. According to Németh (2008), this alternation has been present in the language ever since the 14th c., ie since the time these suffixes had acquired their present form. He claims that orthography played a leading role in preserving *-ban* forms.

It is a crucial question from the point of view of normalization how to deal with these alternating suffixes. How could one decide whether a specific *-ba* word ending is an orthographic variant of *-ban* or it is a different morpheme and vice versa? Below we outline three possible solutions for this problem.

3.1 Method 1

One solution, argued for by some of our colleagues, is to keep the original orthography and thus suppose that *-bAn* always corresponds to inessive, while *-bA* marks illative, as altering these forms would amount to changing a morpheme into another in our representations. We will examine in §5, whether this solution is a feasible one.

3.2 Method 2

Another solution is to consider any discrepancy of the *-bAn/bA* marking in the original texts a mere orthographic deviation and normalize all instances of *-bAn* and *-bA* according to the present-day orthographic rules

without any further marking. It can be argued for that if this is done without care, the current norm would be projected onto the historical data, which could result in (unintentional) data falsification.

This issue is most likely to affect idiomatic oblique arguments that may have changed in the course of time. The corpus contains some examples of clear and unambiguous discrepancy between historical and contemporary argument structures. One such example is illustrated in the following example, where the verb *megy* 'to go' is used in a similar fashion to one use of the verb *jár valahol* 'to visit a place', where the verb has a locative argument: 'Going to (or visiting?) Rozsnyó a second time, Mrs Beke said to her husband.'

(6) megy + *superessive*

Masodban	ugyan	Rozsnyon	menven	Bekene	mondotta	az	Uranak
Másodban	ugyan	Rozsnyón	menvén	Bekéné	mondta	az	urának:
másod	ugyan	Rozsnyó	megy	Bekéné	mond	az	úr
Adj. Ine	Adv	N.Sup	V. PartAdv	N	V. Past. S3. Def	Det	N. PxS3. Dat

Here the *-n* ending of the word *Rozsnyón* is an unambiguous locative suffix: the superessive *-On* and its directional counterpart, sublative *-rA,* can never neutralize like *-bAn* and *-bA.* This sense and argument structure of the verb *jár* exists in contemporary standard Hungarian, *megy,* on the other hand, lacks this pattern today. To be fair, of the 782 occurrences of the lemma *megy* in the Middle Hungarian corpus, we find only two undebatable occurrences of the exceptional argument structure above. Both instances contain the superessive. We find no instances containing any other locative suffix (ie the adessive) or postposition (excluding words ending in *-bA* or *-bAn*). And there are 380 instances which are clear counterexamples: the verb *megy* without any verbal prefix and with a directional argument not containing a *-bA/bAn* suffix.

It is of course not at all evident that this ratio of 2 to 380 (0,5%) is representative of all cases of potential data falsification by normalization, but this negligible number seems to indicate that we are not bound to perform extremely massive data corruption if we choose Method 2.

3.3 Method 3

Nevertheless, there is a third option: to normalize the texts in a way that allows for modification but also keeps the original encoding. In this case, all instances of *-bAn* that should be written as *-bA* according to present-day

rules get a special symbol, and similarly, all *-bA'*s that should be *-bAn* today are assigned another special symbol.

This encoding ensures that the morphological analyzer can assign an analysis to the data that corresponds to what is a presumably correct interpretation of the intended meaning of the text, while the normalized form itself explicitly indicates that the original form was altered in a specific way. This makes it possible to detect and correct mistakes—if later a class of instances turn out to have been modified or left unmodified in error, they can easily be located and fixed. For example, in view of the above example, it may well be the case that *Malomban* 'in . . . mill' in example (7) below was normalized to an illative in error. Nonetheless, we can locate such suspicious cases in the corpus easily. Moreover, this approach renders it possible to evaluate whether the first approach mentioned above would be feasible. The meaning of the following example is: 'But once the witness went to (or visited?) the mill in Babót with Andor Bóna'.

(7) *A possible normalization mistake*

ha nem	egykor	az	Baboti	**Malomban**	**ment**	volt	az	fatens,	Bona	Andorral,
hanem	egykor	a	babóti	**malomba'n**	**ment**	volt	a	fatens	Bóna	Andorral,
hanem	egykor	a	babóti	**malom**	**megy**	van	a	fatens	Bóna	Andor
C	Adv	Det	Adj	**N.Ill**	**V. Past.3S**	V. Past	Det	N	N	N.Ins

In the normalization process we opted for Method 3. Specifically, we marked *-ba/be* final words that we assumed should read *-ban/ben* (ie cases of *n*-dropping) as *-ba'/be'* and *-ban/ben* final words that should read *-ba/be* (ie cases of hypercorrection) as *-ba'n/be'n*. This latter, somewhat counterintuitive notation was motivated by the fact that this way it is extremely easy to formulate a regular expression to search for all of these modified cases in the corpus. We tried our best not to change the words where we thought that the interpretation suggested by the original spelling was sufficiently feasible.

During the analysis, the morphological analyzer software was set to interpret all *-bA'* cases as inessive, and all *-bA'n* cases as illative. This, in essence, is identical to Method 2 (§3.2), ie the data were interpreted according to the present-day norm. However, the unique encoding of modified data made it possible to analyze texts from several respects, which are discussed in §5 below.

4 Causes of variation

Before discussing what our normalization revealed, it is useful to look at the possible causes of the great variation in spelling of *-bA* and *-bAn.* The array of texts on which the two analyzed corpora are based is rather versatile. The earliest documents are mainly codices with translated religious texts. Although most of Middle Hungarian sources are printed documents (Dömötör 2006), in the corpus being discussed only originally handwritten texts are present, namely personal correspondence and records taken at witch trials and other court hearings. The long time span and the great variety of text types and authors naturally leads to a diversity of orthography in the lack of a widely accepted orthographic code. Furthermore, the writers spoke different dialects, which could be another source of variation.

4.1 Alternation in the past

As Németh (2008) points out, *n*-dropping at the end of the inessive suffix *-bAn* had already happened by the time the Csángó people left the Hungarian speaking community, ie the 14th c. What is more, he claims the *-bA* variant was probably the only one present in speech until schooling became general and thus more and more people were exposed to the written norm.

4.2 Orthography in the past

The first orthographic code for Hungarian was accepted only in 1832 (Szemere 1974), ie well after the time in which these texts were created. As Kniezsa (1952) points out, Hungarian orthography was formed relatively slowly and the lack of norm lead to the chaotic spelling of Old Hungarian and Middle Hungarian texts. He claims that the setting up of a permanent chancellery in the middle of the 13th c. was the first step towards the formation of a spelling norm. Németh (2008) adds that the writing traditions of offices were in several respects different from that of everyday correspondence.

As for the orthography of inessive *-ban/ben* and illative *-ba/be, -bAn* is already present in its current form as a suffix in the first extant texts, although it is not yet a harmonizing suffix. In the first documents, the function of illative is realized by a postposition *bele* 'into', although it is written in one word with the preceding noun. The ending *-bA* is first recorded as a harmonizing suffix in the earliest extant Hungarian codex, the Jókai

Codex, the surviving copy of which was probably created around 1448 as a copy of a codex written after 1370 (Korompay 1991, 1992).

Németh (2008) claims that the latent orthographical norm of offices in the 17th–18th centuries was that all instances of the inessive and illative suffixes were written as *-bAn*, while the spoken language had only *-bA* for both suffixes. His survey of official documents and private letters show that while official documents stick to *-bAn* in both inessive and illative case, both *-bAn* and *-bA* appear in private letters for each of the cases. A third tradition is discussed by Sinkovics (2011). He claims that beside the spelling norm of authorities, who used *-bAn* in both cases, another tradition has developed by the 17th–18th centuries in Hungary. Printers applied *-bAn* in inessive and *-bA* in illative case, which is the orthographic norm up to the present day.

Printers, authorities and intellectuals were also influenced by the grammars published for Hungarian. Szathmári (1968), in his study on early Hungarian grammars, found that already Mátyás Dévai Bíró's *Orthographia Vngarica* (1549) distinguishes inessive and illative case, and, from Albert Szenci Molnár (1610) on, all grammars claim that inessive case is marked by *-ban/ben,* while illative case is marked by *-ba/be.* Although it seems grammarians suggested the clear distinction of the two cases already in the 1600s, it was not until 1832 that the first official orthographic code for Hungarian made this a rule.

In sum, the orthography of inessive and illative case markers was influenced by the following conflicting facts and demands.

(8) a. *-bAn* ∼ *-bA* alternation from the 14th c. up to the present day in speech, preferring *-bA*
b. orthographic norm for authorities: always *-bAn*
c. orthographic norm for printers: inessive *-bAn,* illative *-bA*
d. grammars from the 17th c. on: inessive *-bAn,* illative *-bA*

5 Results

Having normalized the texts as outlined in §3.3, we could compare texts in the corpora with respect to the orthography of word forms containing *-bAn/bA* suffixes contrasting it with the present-day orthography of the corresponding words. Doing so we found a varied picture, which is, however, to a great extent in accordance with what Németh (2008) claims. In order to get meaningful statistics, we needed to ensure that the subcorpora we examine contain texts that were written by the same people, unless a sub-

corpus exhibits a homogenous behavior in spite of having a heterogeneous set of authors. Fortunately, the majority of texts have been examined by paleographers. Consequently, in many of the publications that we based our research on, it is marked which parts of the text were written by the same author.

The table in (9) below[4] summarizes our findings for a variety of sources in the corpora. The first four pieces of text are codices containing religious texts from the Old Hungarian era: Jókai Codex, Könyvecse az szent apostoloknak méltóságokról [Booklet on the dignity of saint apostles], Festetics Codex and Guary Codex.

The witch trials court records subcorpus consists of the minutes of over a hundred witch trials. This subcorpus covers a time span over a century. The rest are selected parts of the Middle Hungarian correspondence corpus. Poppel-Batthyány is the already processed part of the correspondence of Éva Lobkowitz-Poppel mainly with members of her family (containing letters addressed to Éva Poppel as well). This corpus consists of letters written by several people. Nevertheless, this subcorpus is uniform with regard to the orthography of *-bAn/bA*. In addition to this, the table contains data on the autographic correspondence of three members of the Nádasdy family and letters written by Pál Telegdy and Sándor Károlyi.

(9) *Inessive and illative case marking*

Corpus	**Date**	**Size**	**bAn**	**bA′**	**bA**	**bA′n**	**sum**	**bAn**	**bA′**	**bA**	**bA′n**	**Type**
Jókai Codex	1370–1440	21945	414	38	153	3	608	0.68	0.06	0.25	0.00	**STD**
Könyvecse	1521	8743	170	5	32	3	210	0.81	0.02	0.15	0.01	**STD**
Festetics Codex	1492–1494	19358	395	143	64	43	645	**0.61**	**0.22**	**0.10**	**0.07**	**HYB**
Guary Codex	1490–1508	20239	25	356	157	2	540	0.05	0.66	0.29	0.00	**BA**
Tamás Nádasdy ag.	1544–1559	4535	4	72	30	0	106	0.04	0.68	0.28	0.00	**BA**
Tamás Nádasdy ??	1559	96	4	1	1	0	6	0.67	0.17	0.17	0.00	**∼STD**
Anna Nádasdy ag.	1548–1558	2237	38	6	6	0	50	0.76	0.12	0.12	0.00	**∼STD**
Ferenc Nádasdy ag.	1568–1569	2870	28	1	1	7	37	0.76	0.03	0.03	0.19	**BAN**
Pál Telegdy	1592–1594	3799	71	0	4	22	97	0.73	0.00	0.04	0.23	**BAN**
Poppel–Batthyány	1625–1641	17493	283	11	10	48	352	0.80	0.03	0.03	0.14	**BAN**
Witch trials	1653–1767	132706	2399	42	62	638	3141	0.76	0.01	0.02	0.20	**BAN**
Sándor Károlyi	1704–1722	14314	237	3	72	6	318	0.75	0.01	0.23	0.02	**STD**

[4] For typographical reasons the table in (9) has been broken in two parts, the second part is located on the next page.

Corpus	Date	INE	ILL	BAN	BA	STD	NST	Type
Jókai Codex	1370–1440	0.74	0.26	0.69	0.31	**0.93**	**0.07**	**STD**
Könyvecse	1521	0.83	0.17	0.82	0.18	**0.96**	**0.04**	**STD**
Festetics Codex	1492–1494	0.83	0.17	0.68	0.32	0.71	0.29	**HYB**
Guary Codex	1490–1508	0.71	0.29	**0.05**	**0.95**	0.34	0.66	**BA**
Tamás Nádasdy ag.	1544–1559	0.72	0.28	**0.04**	**0.96**	0.32	0.68	**BA**
Tamás Nádasdy ??	1559	0.83	0.17	0.67	0.33	**0.83**	**0.17**	**∼STD**
Anna Nádasdy ag.	1548–1558	0.88	0.12	0.76	0.24	**0.88**	**0.12**	**∼STD**
Ferenc Nádasdy ag.	1568–1569	0.78	0.22	**0.95**	**0.05**	0.78	0.22	**BAN**
Pál Telegdy	1592–1594	0.73	0.27	**0.96**	**0.04**	0.77	0.23	**BAN**
Poppel–Batthyány	1625–1641	0.84	0.16	**0.94**	**0.06**	0.83	0.17	**BAN**
Witch trials	1653–1767	0.78	0.22	**0.97**	**0.03**	0.78	0.22	**BAN**
Sándor Károlyi	1704–1722	0.75	0.25	0.76	0.24	**0.97**	**0.03**	**STD**

The table contains the date of creation of the texts, their size in words and *-bAn/bA* statistics. In the case of the Jókai Codex, which is a copy of an older, now lost codex, the two dates are the presumable date of creation of the original and that of the extant copy.

The bAn columns contain the number and ratio of occurrences of standard usage of the *-bAn* suffix (corresponding to inessive, or lexicalized *-bAn* final adverbs etc written in standard orthography). The bA' columns contain the same data on the non standard, *n*-dropped *-bA* forms that should be written *-bAn* according to the present orthographic standard. The bA column contains data on standard illative *-bA* or lexicalized words. bA'n is the count and percentage of hypercorrect *-bAn* usage.

The INE column contains the ratio of *-bA/bAn* occurrences that should be *-bAn* according to current standard orthography and ILL contains the same data for *-bA*. BAN and BA contain the ratio of actual *-bAn* and *-bA* occurrences. Columns STD and NST contain the ratio of standard and non-standard *-bAn/bA* orthography in the subcorpus.

5.1 Orthographies of *-bAn/bA*

Concerning the orthography of *-bAn/bA,* the texts in the corpora can be divided into four or five clusters with regard to the extent to which they differ from present-day standard written usage, depending on whether we distinguish one or two degrees of slight deviation form today's standard. The different groups are as follows.

1a. Some of the texts clearly distinguish the two suffixes in a manner that to a great extent corresponds to our present-day grammatical intuition. We marked this class of documents as STD (standard) in the table. An example of this is Jókai Codex, which was written in the Old Hun-

garian period. Another is Könyvecse (another codex containing religious texts) from the beginning of the 16th century. Part of the Middle Hungarian correspondence, eg that of Sándor Károlyi from the beginning of the 18th century also belongs to this group.

1b. Some documents mostly use these suffixes as the present-day standard, but sometimes (a little more often than in cluster 1a) *-bAn* is replaced by *-bA.* Such a distribution of the suffixes resembles present-day careful speech. Autographic letters written by Anna Nádasdy belong to this group. We marked this class of documents as ∼STD in the table.

2. Other sources mostly neutralize the two suffixes either as *-bAn* or as *-bA,* although sporadic occurrences of the other suffix form are generally present in most of the neutralizing type of documents as well. The documents that tend to use *-bA* in all places are the Guary Codex and the autographic part of Tamás Nádasdy's correspondence. We marked this class of documents as BA in the last column of the table.

3. Completely hypercorrect usage, ie *-bAn* in all (most) places, primarily occurs in Middle Hungarian texts. This type of orthography seems to have emerged in the second half of the 16th century and characterizes almost all of the official court records and legal documents of the era, and much of personal correspondence as well. We marked this class of documents as BAN in the table.

4. The last category is made up of texts that use both forms of the suffix, generally in the way the present standard would require, but hypercorrect *-bAn* and shortened *-bA'* also occur in considerable numbers. An example for such a hybrid text is the Festetics Codex. We marked this class of documents as HYB in the table. A plausible explanation of this distribution of suffixes could be that a text was written by several hands. However, while this is true for Festetics Codex, 98% of the text is the work of a single hand according to paleographers, thus the explanation mentioned above is hardly tenable. A more fine-grained analysis of the Festetics Codex data would be needed to come up with another explanation.

5.2 Analysis

As shown in §4.2 above, several factors must have influenced the orthography of the inessive and illative suffix in Hungarian. In the lack of Old and Middle Hungarian speech recordings, however, the distribution of *n*-dropping and hypercorrect *-bAn* use in actual speech can only be hypothesized based on written records. Németh (2008) claims that *n*-dropping has been wide-spread ever since the 14th c. in the whole Hungarian speaking community, what is more, in certain periods the form *-bAn* was only

present in writing. This view suggests that the orthography of extant texts does not reflect actual language use in this respect.

Our data confirm that the orthography of surviving texts was primarily influenced by factors other than the actual pronunciation of the inessive and illative suffixes. As the chart in (9) above shows, texts conforming to the present standard orthography appear in the whole examined range of time, ie from the 14th c. to the 18th c. These texts clearly mark the semantic distinction of inessive and illative case.

This distinction disappears in texts dated from the first half of the 16th c. Both cases are marked by the suffix *-bA,* which probably reflects actual language use. However, in the second half of the 16th c. a new tendency emerges: both cases are marked by *-bAn,* both in official documents and private letters. Could this mean such a rapid change of pronunciation?

This orthography used as a norm for official legal documents of the Middle Hungarian era seems to be rather counterintuitive from our present-day perspective, given that hypercorrect *-bAn* usage is extremely rare and stigmatized today both in speech and in writing. Note, however, that this type of neutralizing orthography deviates from current standard written language to a much lesser extent when looking at the frequency of mismatches than the more intuitive BA-type orthography. This is due to the fact that inessive is at least three times as frequent as illative in any sizable body of Hungarian text (even when counting lexicalized items containing one of the *-bA/bAn* suffixes as well). This is true of present-day Hungarian as well as Old and Middle Hungarian.

However, it is hard to believe that this orthography corresponded to actual spoken usage, although it may have influenced spoken performance of those using it. It is also interesting to note that although *-bA* forms do sporadically occur in court records, these are mostly restricted to records of actual statements of witnesses and defendants. They practically never occur in the formulas describing circumstances of the trial or the sentence.

5.3 A family of key witnesses

Having a closer look at the texts of the Middle Hungarian corpus, it is worth noting that a considerable amount of letters come from the members of the renowned Nádasdy family. Baron Tamás Nádasdy (1498–1562) made a spectacular career in the 16th century, he was the governor of Croatia and Slavonia, and the palatine of Hungary. He also set up a printing press in Sárvár, Hungary. In his autographic letters, he almost exclusively uses *-bA* for both inessive and illative case. There is a letter in Nádasdy's legacy that paleographers could not categorize as autographic for sure.

This text (marked as "Tamás Nádasdy ??" in chart (9)) clearly falls into the ∼STD category, ie inessive is mostly marked by *-bAn* with a single exception, while illative is marked by *-bA*. Based on this single variable, we could bet that the debated letter was probably written by another hand, as Tamás Nádasdy's own writing definitely falls into the BA category.

Other letters in the Nádasdy family come from Anna Nádasdy, who was the sister of Tamás Nádasdy. She, contrarily to her brother, uses an orthography which is near the present standard (∼STD). Tamás Nádasdy's son, Ferenc (1555–1604), however, almost exclusively used *-bAn* for both inessive and illative, ie his writings fall into the BAN group. Could these three members of one family living in the same period of time speak three different dialects?

This is rather unlikely. A much more feasible explanation is that they learnt and used different orthographic norms. The rise of the hypercorrect *-bAn* norm for official documents happened in the second half of the 16th c., and in the 17th and 18th centuries this practice seems to have been almost exclusive for official written language (Németh 2008 : 100). Ferenc Nádasdy, the youngest of the three members of the family discussed here, apparently learnt this emerging latent norm of hypercorrection. The three Nádasdys could thus be summoned as key witnesses in our debate on the issue of normalization of *-bAn/bA* final words.

5.4 Normalization revisited

At the beginning of this discussion, three ways of normalization were sketched in §3 above. According to Method 1 (§3.1), all *-bA/bAn* suffixes in extant texts should be considered to have the present grammatical function, ie all written *-bA*'s should be considered illative, while all written *-bAn*'s an instance of inessive case. According to Method 2 (§3.2), the suffixes should be corrected according to the present norm, taking into account the context of each occurrence. These two methods were discarded in favour of a third solution (§3.3): all endings not conforming to the present-day standard got a special symbol: *-bA'* marks supposed cases of *n*-dropping, while *-bA'n* stands for hypercorrect instances of *-bAn.*

On the one hand, Method 1 would have suggested that in the Nádasdy family three contemporary relatives spoke three different dialects: one lacking inessive case marking, the other having both inessive and illative, while the third member having no illative marking. Method 2, on the other hand, would have hidden the different orthographic traditions used side by side in the 16th c.

Thus the choice of the Method 3 was justified, and it helped to reveal facts about the history of spelling norms of Old and Middle Hungarian. Method 3 made it possible to calculate how much a certain body of text deviates from present-day orthography and in what ways, and revealed that *-bAn/bA* data in the corpus does in fact deviate from current usage due to merely orthographic factors. Furthermore, it made it possible for us to estimate how much choosing Method 1 could have distorted the data.

It must be emphasized, however, that the actual analysis of data by the morphological analyzer software can follow either Method 1—respecting original orthography —, or Method 2 — taking into consideration the normalization for the present-day norm. Our analyzer program was set to Method 2, ie all instances of *-bA'* endings (*n*-dropping) were analyzed as inessive, and all instances of *-bA'n* endings (hypercorrection) were regarded as illative case.

The table in (10) summarizes *-bAn/bA* statistics for the Middle Hungarian corpus, the four Old Hungarian codices mentioned above, for the aggregate data of both corpora and of subcorpora of BA and BAN type orthographies.

(10) *Summary*

	bAn	bA'	bA	bA'n	sum	bAn	bA'	bA	bA'n	INE	ILL	BAN	BA	STD	NSTD
Mid. Hung.	3251	231	239	750	4471	0.73	0.05	0.05	0.17	0.78	0.22	0.89	0.11	**0.78**	**0.22**
Old Hung.	834	537	374	48	1793	0.47	0.30	0.21	0.03	0.76	0.24	0.49	0.51	**0.67**	**0.33**
All	4255	773	645	801	6474	0.66	0.12	0.10	0.12	0.78	0.22	0.78	0.22	**0.76**	**0.24**
BA	29	428	187	2	646	0.04	0.66	0.29	0.00	0.71	0.29	0.05	0.95	**0.33**	**0.67**
BAN	2781	54	77	715	3627	0.77	0.01	0.02	0.20	0.78	0.22	0.96	0.04	**0.79**	**0.21**

The data show that we would have misanalyzed 1574 tokens, about one quarter of all *-bAn/bA* final words in the whole corpus had we applied normalization Method 1 (column NSTD). For subcorpora using the BA type orthography, the error rate would have been as high as 67%, while for those using the BAN type hypercorrect orthography, it is about 21%. On the other hand, our (very rough) estimate for errors introduced by possible incorrect projection of our present-day intuitions about *-bAn/bA* to the historical data using Method 2 for analysis is about 0.5%.

6 Summary

This study shows how inessive *-bAn* and illative *-bA* endings in Old Hungarian and Middle Hungarian extant texts were normalized for the purposes of automatic morphological analysis. These endings have shown al-

ternation in speech in the past 600 years and their orthography was not at all uniform. In the course of normalization, special symbols were assigned to endings with *n*-dropping (non-standard inessive case) and hypercorrect *-bAn* suffixes (non-standard illative case).

Based on the distribution of the standard and non-standard suffixes, texts fell into four major categories: near standard (STD), extensive *n*-dropping (BA), extensive hypercorrection (BAN) and mixed (HYB). As the first three types existed in the 16th c. even in sources from one family (namely the Nádasdy family), it is plausible to suggest that three orthographic norms were simultaneously present at that time. This confirms the findings of Németh (2008).

REFERENCES

Dömötör Adrienn. 2006. *Régi magyar nyelvemlékek. A kezdetektől a XVI. század végéig.* Budapest: Akadémiai Kiadó.

Kniezsa István. 1952. *Helyesírásunk története a könyvnyomtatás koráig.* Budapest: Akadémiai Kiadó.

Kontra Miklós (ed.). 2003. *Nyelv és társadalom a rendszerváltáskori Magyarországon.* Budapest: Osiris.

Korompay Klára. 1991. *A névszóragozás.* In: Benkő Loránd (ed.), *A magyar nyelv történeti nyelvtana I.* Budapest: Akadémiai Kiadó. 284–318.

Korompay Klára. 1992. *A névszóragozás.* In: Benkő Loránd (ed.), *A magyar nyelv történeti nyelvtana II/1.* Budapest: Akadémiai Kiadó. 355–410.

Mátyus Kinga, Bokor Julianna, and Takács Szabolcs. 2010. „Abban a farmerba nem mehetsz színházba." A (bAn) variabilitásának vizsgálata a BUSZI tesztfeladataiban. In: Váradi Tamás (ed.), *IV. Alkalmazott Nyelvészeti Doktoranduszkonferencia.* Szeged: SZTE. 85–99. (www.nytud.hu/alknyelvdok10/proceedings10.pdf)

Mátyus Kinga. 2009. Az inessivusi (bAn) nyelvtani szerepei. In: Váradi Tamás (ed.), *III. Alkalmazott Nyelvészeti Doktoranduszkonferencia.* Szeged: SZTE. 69–86. (www.nytud.hu/alknyelvdok09/proceedings.pdf)

Németh Miklós. 2008. *Nyelvi változás és váltakozás társadalmi és műveltségi tényezők tükrében. Nyelvi változók a XVIII. században.* Szeged: SZTE, Juhász Gyula Felsőoktatási Kiadó.

Novák Attila. 2003. Milyen a jó humor? In: Alexin Zoltán and Csendes Dóra (ed.), *Az 1. Magyar Számítógépes Nyelvészeti Konferencia előadásai.* Szeged: SZTE. 138–145.

Sinkovits Balázs. 2011. *Nyelvi változók, nyelvi változások és normatív szabályozás.* PhD dissertation, University of Szeged.

Szathmári István. 1968. *Régi nyelvtanaink és egységesülő irodalmi nyelvünk.* Budapest: Akadémiai Kiadó.

Szemere Gyula. 1974. *Az akadémiai helyesírás története (1832–1954).* Budapest: Akadémiai Kiadó.

Váradi Tamás. 2003. A Budapesti Szocilingvisztikai Interjú. In: Kiefer Ferenc and Siptár Péter (ed.), *A magyar nyelv kézikönyve.* Budapest: Akadémiai Kiadó. 339–359. (www.nytud.hu/oszt/elonyelv/adat/buszi.pdf)

Appendix: List of abbreviations

Adj	adjective	**HYB**	hybrid
Adv	adverb, adverbial	**ILL**	illative
ag	autographic	**INE, Ine**	inessive
An	*an* ∼ *en* (inessive-modal suffix)	**Ins**	instrumental
bA	*ba* ∼ *be* ∼ *ban* ∼ *ben* (illative suffix)	**N**	noun
bA'	*n*-dropping in inessive	**NSTD**	non-standard
bAn	*ban* ∼ *ben* ∼ *ba* ∼ *be* (inessive suffix)	**On**	*on* ∼ *en* ∼ *ön* (superessive suffix)
bA'n	hypercorrect bAn in illative	**Part**	participle
bÓl	*ból* ∼ *ből* (elative suffix)	**PP**	postposition
BUSZI	Budapest Sociolinguistic Interview	**Px**	personal suffix
C	conjunction	**rA**	*ra* ∼ *re* (sublative suffix)
Dat	dative	**S, SG**	singular
Def	definite	**STD**	standard
Det	determiner	**Sup**	superessive
EL	elative	**V**	verb
HNSS	Hungarian National Sociolinguistic Survey		

Nóra Wenszky and Attila Novák
wenszkynora@gmail.com
novak.attila@itk.ppke.hu
Hungarian Language Technology Research Group
Hungarian Academy of Sciences
Pázmány Péter Catholic University

Nyomdai kivitelezés: Vareg Produkció (www.vareg.hu)
Felelős vezető: Bernwallner Viktor ügyvezető