

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 Meřčuk 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).

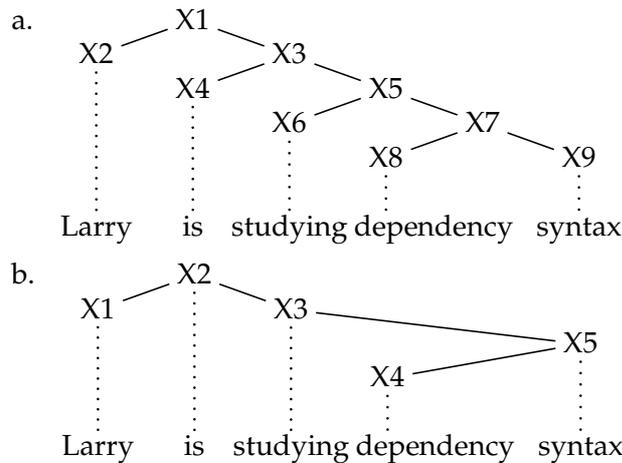
The intuition behind constituency analysis (yielding a PS-tree) is that "the structure of an expression could be exhibited by dividing the expression into parts (its immediate constituents), further subdividing these parts, and continuing until syntactically indivisible units were obtained" (Blevins & 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 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.



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 Mel'čuk, "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.

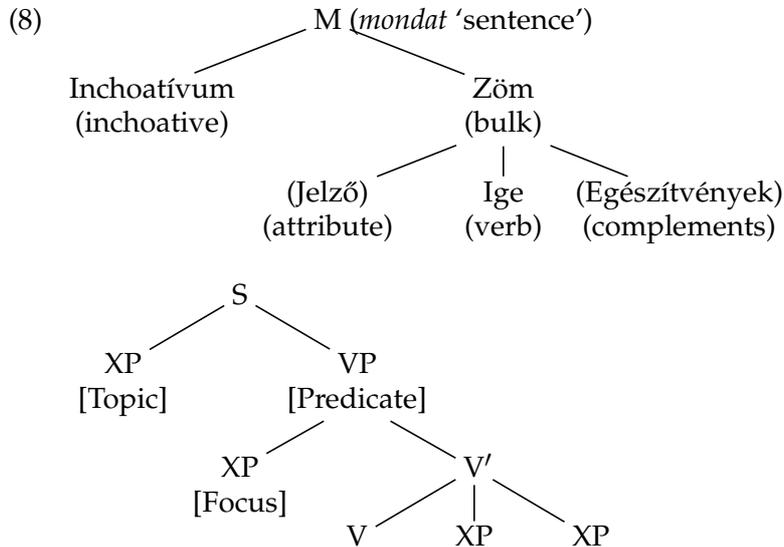
² Throughout this paper, I will cite Brassai's text in my translation.

- (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 (*határozók*). 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.



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)határozó	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 *ige-határozó*, 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 *igehatározók*, 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.'

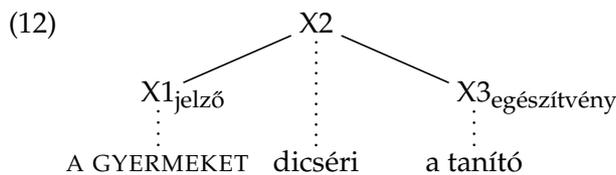
The motivation for the term is that according to Brassai, the accented nominative marked dependent in (10) "bears the same relationship to the verb as an adjective does to a noun" (2011 : 208–209). I will not go into his reasons for the analysis, suffice it to say that the content of Brassai's proposal 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 *határozó* '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.'



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 [*igehatározó*] 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)

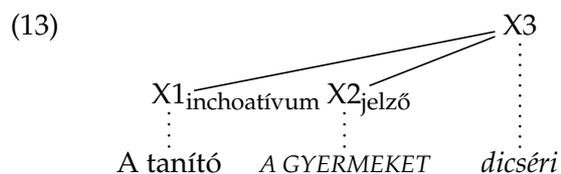
This passage makes it clear that the element to be identified as an inchoative is a dependent of the verb. Having established a strongly verb-centred model of syntactic structure (“a sentence consists of a verb and its associated dependents”, Brassai 2011: 48), Brassai is looking for patterns in the 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.



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.

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András Imrényi
imrenyi.andras@gmail.com
Department of Hungarian Philology
Jagiellonian University, Cracow