There are no Bracketing Paradoxes, or How to be a Modular Grammarian

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Introduction to the Problem. Bracketing Paradoxes (BPs) are seen as a puzzle whose solution may give particular insight into generative structure building and its interpretation at the interfaces. Here I show that the puzzle is an effect of certain erroneous theoretical assumptions held throughout the BP (and general) literature (Siegel 1974, Pesetsky 1977/1985, Allen 1978, Williams 1981, Strauss 1982, Selkirk 1982, Kiparky 1982, Sproat 1985/1988, Guerssel 1985, Spencer 1988, Cohn 1989, Beard 1991, Lieber 1992, Merchant 1995, Müller 2003, Newell 2005/2008, among others). Two such erroneous assumptions are, first, that affixes' phonological behaviour is mediated through morphological classification (+/Level 1/Stem, #/Level 2/Word) and, second, that the same type of bracketing/structure exists as part of both morpho-syntactic and phonological representations. In this talk I correct these errors by demonstrating that a dissolution of the paradox emerges from a strict CVCV linear analysis (Scheer 2004) of phonological outputs combined with cyclic interpretation of syntactic phases. There are, in fact, no BPs. This does, however, give particular insight into the generative process and its relation to the interfaces, the most important being the requirement that brackets, or a mirroring of morpho-syntactic hierarchical structure, be eliminated from the phonological representation. This elimination renders the system truly modular in the Fodorian sense.

A sketch of the solution. Consider the traditional presentation of the well-known BP *transformational grammarian*. The syntactico-semantic bracketing of this word must be 1(a), given the special meaning of *transformational grammar*, while the morpho-phonological bracketing must be as in 1(b), given that 'Level 1' affixes like *-ian* must merge with their base before modifiers/compound non-heads.

1. (a) [[transformational grammar]ian] (b) [transformational [grammarian]]

A problem with (1) is that the BP rests on the presupposition that the distinction between classes of affixes in English (and other languages) are morphological, or lexical, in nature. The classification of affixes into 'Level 1' and 'Level 2' (affixes have been classed as 1, 2, or both) forces merger of *-ian* to *grammar* before *transformational*. In other words, the phonological closeness of *grammar* and *-ian* is due to the phonology 'piggy-backing' on the morpho-syntactic structure. (It is of note that some recent non-modular accounts of Level 1/2 affixes in Optimality Theory retain the Level-distinction (Bermudez-Otero 1999 et seq.) and some do not (e.g. Raffelsiefen 1998). A discussion of these accounts will be provided, and argued against.)

Affixes in the phonology, however, are not restricted to appearing in the position ascribed to them by the morpho-syntax as demonstrated by operations such as infixation, liaison, cliticization (ex. Italian dialect variation in Peperkamp 1997), morphological merger/lowering (Halle & Marantz 1993), and phonological merger (Newell & Piggott 2014). For example, it is clear that *bloody* in *absobloodylutely* is not in a syntactic position intermediate to *abso* and *lutely.* Given this indisputable evidence, we must consider the possibility that the syntactic structure, and input to both the phonology and the semantics, is (1a), and that *-ian* is subject to one of the operations above, ensuring its phonological proximity to *grammar* despite its syntactic distance. This is exactly what has been independently proposed by Newell (2017). Newell shows that a better account of the 'Level 1/2' distinction in English is given if this difference is not morphological but phonological; so-called Level 1 affixes begin with a floating vowel and therefore link with an open vocalic skeletal position at spell-out, as in (2):

2.

C	V	C	V	C	V	C	V		C	V	C	V		
|	|	|	|	|	|	|			|	|	|	|		'grammarian'
g	ø	ɹ	ə	m	e	ɹ		i	j	ə	n	ø		

It is irrelevant to the phonological representation if *transformational* has been interpreted as closer (e.g. in a cycle/phase) to *grammar* in the syntax/semantics. The hierarchical structure of the syntax does not survive into the linear phonological module. Liaison, as in (2) forces the two morphemes to be pronounced as a single 'domain' because they share a (CV) syllable (this is crucially not true

for *transformational* and *grammarian*). Importantly, this translation of syntactic structure into linear phonology challenges the need for the prosodic hierarchy (PWd, PPh, etc.), as independently discussed in Newell & Scheer (2007), Scheer (2008), (Haugen & Siddiqi 2016), Newell (2017a). The 'phonological bracketing' in (1b) is therefore misleading/a false representation. All BPs of this type are resolved by accepting a fully modular approach to the phonological interface. That this is not a notational variant of a PWd/bracketing account will be demonstrated.

Dealing with allomorphy. The derivation of *transformational grammarian*, ignoring the internal structure of *transformational*, is effected in at least two steps. Presupposing cycles/phases and Late Insertion (as in Distributed Morphology or Nanosyntax), $[[[\text{transformational}]_a$ grammar$_{\surd}]\varnothing]_n$. undergoes Vocabulary Insertion (VI) and PF outputs *tɹænzfəɹmeʃənəl gɹæməɹ*. The second cycle $[[[\text{transformational}]_a$ grammar$_{\surd}]\varnothing]_n$ ian$]_n$, after liaison induces re-syllabification and stressing, gives *tɹænzfəɹmeʃənəl gɹəmeɹijən*. PF readjustments of the sort seen here are demonstrably exempt from PIC-type effects (Newell 2017b), and are therefore unproblematic. What of an example like *Baroque flautist*? Here $[[[\text{Baroque}]_a$ flute$_{\surd}]\varnothing]_n$, outputs *bəɹok flut*. What is clear here is that the addition of the suffix *-ist* after insertion of the Vocabulary Item *flut* should give *flutɪst*, and not *flawtɪst*. Liaison cannot induce allomorphic selection post-hoc. This appears to reintroduce a BP, where *-ist* must determine the allomorphy of *flute/flaut* in the first cycle. Luckily, independent arguments from comparative allomorphy in Bobaljik & Wurmbrand (2013) show that roots with multiple allomorphs will suspend cyclic interpretation until the next head is merged, allowing for a larger domain of allomorphic conditioning. There are multiple reasons why the adjunct *Baroque* will not trigger spell-out of *flute/flaut*. $[[[\text{Baroque}]_a$ flute$_{\surd}]\varnothing]_n$ will be generated in the syntax, and the root allomorphy will delay VI (and possibly LF interpretation). *-ist* will be merged, giving $[[[\text{Baroque}]_a$ flute$_{\surd}]\varnothing]_n$ ist$]_n$ and VI will give *bəɹok flawtɪst*, with allomorphy and subsequent liaison triggered by the suffix. Here the entire construction is interpreted together. Under this analysis, BPs of this type are also illusory.

Other types of Bracketing Paradoxes. Two other types of BP are presented in the literature. The first is the comparative paradox in words like *unhappier*. *-er* must merge first to *happy*, as the analytic/synthetic allomorphy of the comparative is dependent on the base being ≤ two syllables, [un[happier]], while *un-* must simultaneously be merged first to give the semantics implied by a [[unhappy]er] bracketing. The second are 'Particle Verb' paradoxes, such as the Russian /pŏdŭ-žĭg-l-ŭ/ → [podžëg] 'set on fire.masc' (Pesetsky 1979). Here left to right lowering (and deletion) of Yers would give the ungrammatical **podožëg*, indicating that the particle *pŏdŭ-* defines a separate phonological domain from its base *žĭg-l-ŭ* [pŏdŭ[žĭg-l-ŭ]] while the verb-particle simultaneously evidence an idiomatic LF interpretation [[pŏdŭ-žĭg]-l-ŭ]. Both of these BPs will be demonstrated to be accounted for given the cyclic syntactic analyses of their derivations (e.g. Ramchand & Svenonius 2002 for particle verbs, Newell 2005 for *unhappier*), giving a CVCV output where the prefixes are not syllabified with their bases, while the suffixes are.

Import of this analysis. Bracketing Paradoxes have been based on the assumption that hierarchical structure exists in both the syntax and the phonology. Recent work has argued that phonological outputs are strictly linear. Phonological 'boundaries' considered to be due to PWd structure are argued to be better accounted for via an examination of the relationship between segments established at the point of PF interpretation. This view of the syntax-phonology interface allows for a dissolution of BPs, which in turn supports a modular approach to linguistic analysis and has an important impact on determining what constitutes a licit theory of phonology.