A span is a thing: A span-based theory of words.

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1. Introduction. I present novel arguments for a theory of SYNTACTIC WORDS which is based on the notion of SPANS, where a span is defined as a sequence of heads in a complementation relation:

(1) A span is a head (a minimal X^0) or a sequence of heads ⟨h_1, h_2, ...⟩ such that for each n>1, h_n is the head of the complement of h_{n-1} (Williams 2003, Svenonius 2012, Merchant 2015).

The most modest and robustly supported claim of this paper (“a span is a thing”) is that in a late insertion model of syntax like DM (Halle & Marantz 1993), spans are relevant for spell-out, contra standard DM which takes spans to be epiphenomenal. The bolder claim (“a span-based theory of words”) is that the span-based model of word structure developed here which eliminates head movement entirely is superior to its competitors, including not only standard DM but also Matushansky (2006), Harizanov & Gribanova (2018), and the versions of Nanosyntax that do not recognize spans (e.g., Taraldsen 2018).

The structure of the argument is as follows. I briefly establish in §2 that there is a need to recognize a syntactic word at least as a domain for spell-out. In §3 I identify a certain class of allomorphy which provides a sufficient condition for determining that two morphemes are in the same syntactic word. I then show in §4 that there are complex words which are not constituents in the unmoved positions of their components and which cannot be derived through movement (head nor phrasal).

I demonstrate this by examining a species of bracketing paradox structurally similar to the example transformational grammarians, specifically cases from several languages in which a modifier modifies an inflected head with at least two suffixes which spell out heads higher in the extended projection than the modifier, and in which morphologically conditioned allomorphy establishes that the two suffixes are in the same morphological word as the host. The position of the inflected word to the right of the low modifier shows that the lexical head cannot have raised by head movement to combine with the suffixes; the fact that there are two suffixes shows that the suffixes cannot have lowered to combine with the stem; and the allomorphy shows that the word cannot have been formed by phrasal movement. Since the root or stem is compositionally separated from the affixes by the modifier, and the word cannot be formed by head movement or by phrasal movement, another mechanism is needed.

I argue that the prosodic word is the outcome of an operation of spell-out performed directly on a span, without movement or operations like fusion or amalgamation. Specifiers and adjuncts do not need to be moved out of the way, because the operation targets the span directly. Rather than marking certain heads for movement, fusion, or amalgamation, as on other approaches, every maximal span spells out as a word (following Brody’s 2000 Mirror Theory), as do specially marked spans which are not maximal, breaking the maximal span up into multiple words (Bye & Svenonius 2012) This inverts the usual markedness assumption about heads and word formation (see also Svenonius 2016).

2. The syntactic significance of the word. Though the existence of syntactic words is sometimes questioned (e.g., Julien 2002), there is an underappreciated sense in which they are inescapable. Namely, prosodic words in all languages are syntactically circumscribed; certain syntactic configurations and not others map to prosodic words, like V-T in English (suffixal tense) but not D N (freestanding determiners), or N-D in Norwegian for definite but not indefinite D (suffixal definite article, freestanding indefinite article). Setting aside simple clitics (Zwicky 1977), which heads form words is determined by their syntactic categories and features and their syntactic configurations, not by their phonological exponence.

Noun phrases and clauses are organized into extended projections (Grimshaw 2005, Cinque 1999) in which a lexical N or V is dominated by a hierarchical sequence of functional heads; a contiguous subset of those functional heads is integrated into the N or V as inflectional morphology, so that the inflected word corresponds to a span which is a subpart of an extended projection, and I take this to be the core explanandum for a syntactic theory of word formation. In standard DM, the heavy lifting in word formation is done by head movement, constrained by the Head Movement Constraint (HMC, Travis 1984, Baker 1988), which limits head movement to spans. It is erroneously believed that the HMC can be made to follow from Relativized Minimality (Rizzi 1990). However, that a nonbranching adjunct to vP, for example, cannot be attracted to T by head movement must be independently stipulated, in a way that presupposes spans.

In this model, the linearization of words in the span is independent of whether affixal heads in the word have overt exponence (as in Brody 2000, and contra the Rich Inflection Hypothesis). The model can accommodate the possibility that linearization of heads correlates with semantic scope as argued by
Lechner (2006) and Roberts (2010) but does not predict it.

3. Morphologically conditioned contextual allomorphy. Phonologically conditioned allomorphy can be conditioned across word boundaries, as with the English indefinite article, a vs. an (Paster 2006). Syntactic features can also be copied across word boundaries, as when a French determiner agrees in gender with a noun. But there is also a more local kind of word-internal CONTEXTUAL ALLOMORPHY (CA) in which traits which are neither purely phonological nor purely syntactic condition the choice of an immediately adjacent listed allomorph (cf. Bonet & Harbour 2012). Typical examples of CA are conjugation and declension class-sensitive affixes, for example English past -ed for weak verbs versus no overt suffix for strong verbs. Diagnostically, if allomorph selection is neither phonologically conditioned nor syntactically general, then it must be CA, and the conditioning environment is contained in the same word. For late insertion theories, this is made to follow from cyclic locality in the spell-out procedure (e.g., Embick 2010).

Thus, CA is a diagnostic for two exponents being located in the same spell-out domain, hence for their associated heads being located in the same syntactic word. Any target of phrasal movement constitutes a maximal span and hence is a domain of spell out; this explains why CA is never observed to hold between a moved element and its host.

4. Words which cannot be derived by movement. I analyze a series of constructions from different languages in which a modifier precedes an inflected head with at least two suffixes, and both suffixes can be identified with functional structure which is higher than the position of the modifier. Four examples are presented in (2). In this paper I focus on nominal constructions to take advantage of the results of Cinque’s (2005) typological survey, but the logic applies to verbal constructions when information structure and argument licensing are controlled for.

(2) a. íslensk-u hest-ar-n-ir (Icelandic; Sigurðsson 1992)
   Icelandic—WK.M.PL.NOM horse-M.PL.NOM-DEF-M.PL.NOM ‘the Icelandic horses (NOM)’

   other lad-DEF-ERG ‘the other lad (ERG)’ (Limbu; van Driem 1987)

   normal-tn—AT business—tn—AT ‘in a normal business’ (Finnish; Karlsson 1977)

   great-FUT-2-NOM shaman-FUT-2-NOM ‘[you will be] a great shaman’

In each of these examples, at least two of the suffixes on the noun can be shown to express categories which are higher than the base position of the modifier (arguments building on Cinque 2005 and on a KP analysis of case; not all examples hinge on case being structurally represented, e.g., the Icelandic example goes through on the basis of number and definiteness). The position of the modifier shows that the noun has not undergone head movement to pick up the suffixes. Cinque (2005) shows that modifiers cannot undergo leftward movement to derive discourse-neutral basic word orders, so the order cannot be the result of a combination of head movement and modifier movement. The suffixes cannot have lowered to the noun (Bobaljik 1995), because it is a central claim about lowering that it requires strict structural adjacency, and the higher suffix is not strictly structurally adjacent to the noun (Bobaljik & Thráinsson 1998). Therefore, head movement cannot derive the examples in (2).

I also show that phrasal movement cannot derive the structures in (2). This is because the suffixes in (2) are involved in CA alternations which show that they are word-internal. For example, in the irregular Icelandic noun menn ‘men M.PL.NOM’, there is no plural suffix in the indefinite form (compare hest-ar in (2-a)). However, in the definite form menn-ir-n-ir ‘men-M.PL.NOM-DEF-M.PL.NOM’, the plural suffix emerges, showing that the allomorphy of the number suffix is sensitive to the presence of the definite suffix. The contrast with nouns like spæn-ir-n-ir ‘(the) wood shavings (M.PL.NOM)’ shows that the alternation is neither phonologically conditioned nor syntactically general, hence hence word-internal.

Similarly, in Limbu the definite suffix shows a CA alternation with zero in the ergative case after derivational suffixes that end in /a/ (van Driem 1987), e.g., in yay sar umbre-lle ‘third-born-(DEF)-ERG’ (where the /a/ changes to [v]). The restriction to derivational suffixes shows that the allomorphy is not purely phonological, and the restriction to derivational suffixes ending in /a/ (and some other specific contexts) shows that it is not syntactically general either. Thus the definite suffix and the case suffix must be in the same morphological word as the stem, ruling out a phrasal movement derivation of the morpheme order.