Introduction: Affixes and bases

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Abstract

This special issue includes a selection of papers presented at the 2nd Vienna Workshop on Affix Order held in Vienna, Austria on June 4–5, 2009. The workshop was in honor of Wolfgang U. Dressler on the occasion of his 70th birthday. However, this special issue differs from the classical Festschrift dedicated to a renowned scholar and is ‘more special’ in two respects at least: 1) not all authors are Dressler’s friends and colleagues, some of them are only indirectly related to him, through his students; and 2) since the papers were presented at a topic-oriented workshop, they are thematically uniform. In other words, this special issue is a kind of scientific genealogy in terms of affix ordering. Thus, the title Affixes and bases should be understood in two ways: literally – affixes and bases as linguistic notions, and metaphorically – affixes and bases as linguists related directly and indirectly to a prominent base: Wolfgang U. Dressler.

Is there affix-based morphology?

The papers in this issue tackle various aspects of affix ordering but the question that unites them may be formulated as: Is there affix-based morphology? As the reader will see below, the problem is not novel, but it has not been discussed in morphological theory as yet, at least not in the way it is addressed herein.

We will speak of affix-based morphology if a complex morphological form of the type BASE-A-B-C, where A, B and C are affixes, can be defined only in terms of relations between the affixes A, B and C, without paying attention to specific properties of the base, except to its word-class specification. Consider an example from English where morphological selectional restrictions (see Fabb 1988, Plag 1996, among others) represent affix-based morphology. It is well-known that the English suffix -ization (or -ize + -ation) always selects the adjectivizer -al. Thus, one can produce the combination -izational without referring it to any particular base. Formations such as -izational are examples of affix-based morphology. In the literature, affix-based data...
presentation is typical of studies on inflectional morphology; for instance, when describing inflectional classes, morphologists often list only the inflectional affixes without bases.

Fixed affix combinations represent the clearest case of affix-based morphology. If in a given language, affix A is always followed only by affix B, A and B form a fixed combination and the latter may be produced as non-derived, i.e. non-compositional. I suppose that cases in which A is predominantly followed by B may also be generated as a non-compositional AB structure. The combination of two affixes, A and B, is derived (= compositional) if it is formed as [A+B]; if it is produced as a fixed AB morphological structure, it is non-derived (= non-compositional in form and even in meaning, see the discussion below). The same logic can be applied to fixed sequences of three (or more) morphemes, such as ABC, where the fixed combination AB is always followed only by the affix C.

If ‘base-driven’ and ‘affix-driven’ refer to the direction of a morphological derivation (‘base-driven’ means base-to-affix direction of derivation whereas ‘affix-driven’ indicates affix-to-base direction, not necessarily with any selection going on), affix-based morphology can be base-driven and affix-driven at the same time, hypothetically at least (depending on which affix is taken as a base), though base-driven morphology better corresponds to the speaker’s intuition.

As might be expected, different theories of morphology give different answers to the question whether there is affix-based morphology. For example, Dressler’s Natural Morphology (NM) allows for root-based, stem-based and word-based derivations (I will refer to root, stem and word as BASE and call such derivations BASE-based), but not for affix-based morphology. Of all allowed types of bases in NM, words, since they are primary signs in semiotic terms, are the most natural (see e.g. Dressler 2000). Such an understanding of the organization of morphology, from the very beginning, rules out affix-based derivations. In the literature on affix ordering, however, many studies define affix order in terms of relations between affixes only. The reader will find the same state of affairs in the present issue: some of the papers provide BASE-based analyses (i.e. are consonant with NM), others rely on affix-based dependencies, still others use a mixture of the two strategies, e.g. Manova (this issue) sees the structure BASE+SUFF1+SUFF2 as describable through base-driven SUFF1-SUFF2 dependencies, i.e. SUFF1 is treated once as part of the derived base, which gives [BASE+SUFF1] headed by SUFF1; but SUFF1 also plays an important role in the combination [SUFF1+SUFF2] which can be thought of without the BASE. Semantic-syntactic approaches to affix order (see Rice 2000 and the references therein) based on Baker’s (1985) Mirror Principle also profit from both strategies; see the papers by Rice and Markova in this issue. Semantic (scopal) ordering assumes, on the one hand, that semantic dependencies reflect syntactic structure that is built step-by-step, i.e. [[[ROOT+A]+B]+C] (Rice 2000: 28). On the other hand, scopal ordering is defined as a relation between affixes (category exponents), which implies that parts of the word structure might be produced separately, as affix combinations, and then these pieces of structure larger than an affix, might be attached to other affixes or bases. It should be mentioned here that in the literature, combinations of two
affixes have been sometimes treated that way, i.e. as either a fixed AB combination or as a combination (AB) that requires a particular suffix C (recall the -iz-ation-al example from English).

With respect to semantics, fixed affix combinations can be seen as parallel to morphomes in inflection (Aronoff 1994), i.e. hypothetically a fixed affix combination, such as ABC, is not necessarily associated with well-definable semantics. Both a morphome and a fixed affix combination are instances of purely morphological structure that is hard to identify semantically (and thus also to derive syntactically). A morphome cannot be associated with unique semantics because it seems to have (too) many functions (meanings) in a paradigm, while a fixed affix combination cannot be covered by a single semantic category since it, depending on the number of the affixes involved, stands for two (or more) semantic categories. Recall the above-mentioned fixed combination from English -iz-ation-al and try to define it semantically.

Templatic affix ordering (Simpson and Withgott 1986; Spencer 1991: 212f; Inkelas 1993; Stump 1997, among others) where the occurrence of an affix implies the use of some other particular affix or affixes is also a kind of affix-based morphology. Note that syntactic approaches experience significant difficulty accounting for template ordering (which indirectly proves the affix-based character of the latter) and Baker (1985) himself confesses that the Mirror Principle, i.e. ROOT-based step-by-step syntactic affix ordering, is incompatible with templates, if the latter exist.

In a recent paper on variable prefix ordering in Tagalog (specifically on the placement of the Tagalog contemplated aspect morpheme),6 Ryan (2010) labels the two-morpheme (step-by-step) ordering ‘bigram morphotactics’. ‘A bigram constraint X–Y, in which X and Y are (classes of) morphemes, can be taken to penalize each instance of X not immediately followed by Y (cf. local selectional restrictions, e.g. Fabb 1988). The ranking of these constraints motivates ordering restrictions […] in which X–Y–Z is the only grammatical output for an input comprising X, Y and Z.’ (p. 767). Ryan’s model assigns a weight to each bigram, which allows him to treat every possible two-morpheme combination as a constraint in the sense of Optimality Theory (Prince and Smolensky 2004), all bigrams being ranked according to their weight. The weight of a bigram depends on the frequency of occurrence of that bigram in a corpus (the exact algorithm of weight assignment is not relevant to us). Thus, the most highly ranked bigrams in Ryan’s model are parallel to our fixed combinations. Ryan promotes the bigram-morphotactics analysis as a novel approach ‘intended to supplement, not replace, semantic factors in affix ordering such as scope’ (p. 785). However, as was seen above, two-affix dependencies are a common strategy for studies that explain affix ordering in terms of selectional restrictions, semantic scope, templates or as a combination of scopal and templatic ordering. The difference between selectional restrictions, scopal ordering, templates and Ryan’s (2010) weighted bigrams rests in the fact that the first three approaches focus on (particular) stable combinations that are existing whereas Ryan’s focus is on variable (i.e. unstable) and possible combinations. Therefore, Ryan’s approach, at first, seems different. However, the logic in Ryan (2010) is the same as in selectional restrictions models and scopal ordering. It is only applied to different types of ordering – a variable one. Finally, it should be noticed
that affix-based ordering in terms of fixed combinations challenges Ryan’s analysis since part(s) of bigram sequences could be non-compositional, i.e. non-bigramic. Ryan acknowledges the existence of fixed combinations (‘unsplitability’ of two affixes in his terms, p. 768) but since his analysis is couched within Optimality Theory, he checks for violations even of fixed combinations (p. 769), which is an unnecessary step that makes his approach costly.

In sum, whereas semantic ( scopal ordering) and templates allow for affix-based morphology, syntactic approaches to affix order and NM do not. However, storage and retrieval of fixed combinations of affixes (i.e. offline access) is certainly more economical than online production (i.e. by derivation) of those affix combinations every time. In the literature, indirect evidence for the existence of both ‘online’ and ‘offline’ production of derived structure is provided by the Parsability Hypothesis (Hay 2001, 2003 and later work). The Parsability Hypothesis adopts a dual-route access model to morphological structure and depending on the frequency of the BASE treats some derived forms as non-derived. More precisely, Hay claims that if the derived form is more frequent than its BASE, the derived structure is accessed as non-derived. Thus, word structure that is obviously derived in form might be non-derived with respect to production and processing.

Clearly, fixed affix combinations may include affixes the order of which is easy to explain, as well as affixes the order of which is inexplicable. Fixed combinations of the latter type, if they exist, are of particular importance to morphological theory because the mere fact of their existence is the explanation of their inexplicable ordering, i.e. fixed combinations whose interpretation cannot be directly computed from their parts could be non-compositional morphological structure.

The papers in this issue

The papers included in this special issue cover a number of affix ordering problems. Data come from well-described and underdescribed languages alike, including the languages of the Americas and Africa, Slavic, Finno-Ugric, Germanic, and Romance. Two papers (those by Łazinski and Markova) are entirely devoted to prefixation, whereas the other papers either analyze suffixation (Kiefer, Manova) or suffixation and prefixation (Rice and Bertinetto). Most of the papers (Rice, Kiefer, Bertinetto, Łaziński, and Markova) are on verbal morphology and tackle word-class-preserving affix ordering. The paper by Manova is exclusively on derivation and thus also on word-class-changing morphology.

Keren Rice’s paper provides an overview of the factors involved in the ordering of word-class-preserving affixes in languages with complex morphology. The author distinguishes grammatical, extra-grammatical and arbitrary principles. According to Rice, grammatical principles are semantic, syntactic, phonological, and morphological by nature. Extra-grammatical factors involve frequency, productivity, and parsability. Affix order specified by a template is seen as arbitrary. Rice’s approach is synchronic and evidenced with copious examples from lesser-known languages, mainly from verbal morphology.
Ferenc Kiefer and András Komlósy’s paper contributes to the discussion on the ordering of word-class-preserving verbal suffixes from a different perspective and with data from a well-known language, Hungarian. The authors show that the order of the stem forming, the causative, the factitive, the diminutive and the possibility suffixes is determined by morphological constraints, productivity and prototypicality, whereby the suffixes required by morphology are more prototypical and appear closer to the stem. According to the authors, prototypicality correlates with productivity in the sense that more prototypical affixes are less productive.

Pier Marco Bertinetto’s paper concerns verb inflection, and is, in contrast to the previous two papers, based on historical data. Bertinetto focuses on the development of the verb inflection paradigms of two lesser-known languages, the genetically related Ayoreo and Chamacoco, both from the Zamuco family. The verbal morphology of the two languages involves prefixation and suffixation at the same time but is less complex in terms of combinations than the instances discussed in the previous two papers. However, the organization of the Ayoreo and Chamacoco verb paradigms violate a robust generalization concerning affix order, namely that person markers should precede number markers, irrespective of their position in relation to the root. Through reconstruction of the paradigms of the Ayoreo and Chamacoco verbs Bertinetto suggests a solution to this affix ordering violation.

Marek Łaziński’s paper is devoted to Polish verbs, specifically on perfectivizing prefixes. Since these verbal prefixes are grammaticalized prepositions, the author also investigates the relation between prefixes and homonymous prepositions and determines the extent to which the prefix meaning is still connected to the meaning of the cognate preposition. Łaziński compares the general frequency of prefixes in aspectual pairs (two verbs that exhibit the same semantics and differ only in aspect) with the number of possible prefix combinations and identifies the most productive prefixes in the Polish aspectual system. The productive Polish prefixes are further compared with their cognates from other Slavic languages. The analysis uses data from bilingual electronic dictionaries and the National Corpus of Polish. It is shown that the verbal prefixes that combine with others most freely in verbal derivatives are usually only weakly lexicalized, and function as pure perfectivizers.

Angelina Markova’s paper also deals with multiple prefixation, specifically with the linearization of the Bulgarian verbal prefixes. Following Baker’s (1985) Mirror Principle, the author claims that the linearization of the Bulgarian prefixes is syntactically driven. With Cinque (1999), Markova argues for the existence of a universal hierarchy of functional projections, such that ‘whenever a prefix bears some aspectual content, it is merged within this hierarchy of aspectual features as a head of the corresponding functional projection’. Markova establishes three types of prefixes in Bulgarian: lexical (idiosyncratic), inner (argument-structure related) and outer (adverbial), and shows that the surface order is always outer-inner-lexical.

Stela Manova’s paper focuses on the further derivation of already derived words in English and Bulgarian. With the help of Gauss-Jordan elimination, a problem-solving algorithm borrowed from mathematics, Manova distributes SUFF1-SUFF2 combinations in a specific way. In doing so, she shows that there is a clear tendency
for a SUFF1 to select only one particular SUFF2 of a major syntactic category (word class), N, V and ADJ, in both English and Bulgarian. If more than one SUFF2 with the same word-class specification exists, then it is either the case that one of the SUFF2 suffixes applies by default (i.e. most of the derivatives exhibit that suffix) or that semantic rules differentiate between the different SUFF2 suffixes and, because of blocking, allow the attachment of only one particular SUFF2 in any given instance. The author also notices that since derivation is prototypically word-class-changing, SUFF1 and SUFF2 usually have different word-class specifications. Manova sees the word-class specification of a suffix as based on the speaker’s cognitive knowledge about the world; the approach is therefore classified as cognitive.

**Conclusion**

The papers in this special issue cover a number of affix-order-related problems but the major question that they raise is whether there is affix-based morphology. Although Natural Morphology and syntactic approaches to affix ordering are incompatible with affix-based derivation, affix-based morphology has been widely used in the literature on affix ordering so far, especially by selectional restrictions models, semantic scope approaches and template morphology. Since in some instances storage and retrieval of fixed affix combinations are more economical than online derivation, a balanced view that allows for both types of morphology appears most reasonable, i.e. morphology can be BASE-based and affix-based at the same time, cf. the explanation of base-driven and affix-driven morphology in Manova & Aronoff (2010). Thus, the present selection of papers also contributes to the continuing interest in issues surrounding affix order and can be seen as closely related to the two special issues of the journal *Morphology*, Affix combination (20:1) and Affix combinations (Part two) (20:2), edited by Manova and Aronoff and Aronoff and Manova respectively, and published in 2010.

Finally, my favorite strategy, borrowed from mathematics, for linguistic analysis: all (linguistic) problems are solved somewhere in the real world, one just needs to make the right analogy. This logic speaks for a balanced approach to affix order too. The fact that in a special issue dedicated to Wolfgang U. Dressler there are papers by linguists who are only indirectly related to him, through his students, is evidence for affix-based relations in the real world; and thus also in morphology. On the other hand, the importance of the strong foundation (BASE) is obvious too, again in the real world and in morphology alike.

In sum, affix-based morphology, since it is more economical in some cases, certainly exists. Future research, both theoretical and psycholinguistic, is necessary to shed light on the exact role of pieces of structure larger than an affix in affix ordering. It would be interesting to see whether combinations of affixes the order of which is problematic to affix order theories occur in fixed structures, i.e. to see whether hard-to-explain combinations of affixes are not accessed as non-compositional structure by the speaker, which would thus explain their inexplicability.
Notes

1. The author and the 2nd Vienna Workshop on Affix Order from which the papers included in this special issue arose were supported by the Austrian Science Fund, Grant V64-G03, Elise Richter fellowship.

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2. For feedback on the ideas discussed in this section, I am grateful to Keren Rice, Alice C. Harris, Mark Aronoff, and especially to Greg Stump for his detailed comments and insightful criticism.

3. Throughout this paper, I use ‘X-based’ when the base of the derivation is referred to and ‘X-driven’ if only the direction of the derivation is meant.

4. A stem is a root plus an affix.

5. Scopal (semantic) affix ordering is a case of lexical-incremental morphology (in the sense of Stump 2001: 2), i.e. an affix associates form and semantics and morphology is information-increasing.

6. According to Ryan (2010: 763–4), in verbs with one or more prefixes, the contemplated aspect morpheme often varies freely in position for individual speakers; and in verbs with three or more prefixes, that morpheme can take three or more positions.

References


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