

de Lacy, Paul. Review of Eva Zimmermann (2017). *Morphological length and prosodically defective morphemes*. xii + 350pp. Oxford University Press.

This book presents a theory of affixes that force their stems' segments to alter in length or visibility ('subtraction'). The central theoretical proposal is that such affixes are 'prosodically defective': they have underlying representations that cannot be realized straightforwardly in output forms due in part to structural deficiencies – specifically, a lack of prosodic connectedness. The grammar's methods of integrating such morphemes into well-formed prosodic structure can result in alterations of length, and even subtraction of stem material.

As an example, Zimmermann (2017) (hereafter 'Z') argues that the Gidabal imperative is argued to consist of a floating mora. The mora cannot be realized as-is, and so it attaches to the stem's final vowel: e.g. /gida+^μ/ → [gida:] 'tell+IMPERATIVE' (p.4). Morphemes can also contain segmental material other than the defective prosodic element. For example, the Wolof reversive has a floating mora and an /i/, with the result that stem-final consonants lengthen and an [i] appears: e.g. /ub-^μi/ → [ub:i] 'open+REVERSIVE'.

While the idea of a morpheme that consists of a floating mora is not new, it is a small part of Z's much larger theory of morpheme form. The proposed theory holds that morphemes can consist of prosodic elements such as μ , σ , and Ft nodes, and not (just) segmental material like C or V slots (e.g. Clements & Keyser 1983). An argument for prosodic elements comes from the Dhaasanac plural *-am*, which causes vowel lengthening in some environments but consonant gemination in others: e.g. /kur-^μam/ → [kur:am] 'knee+PLURAL' cf. /deger-^μam/ → [degera:m] 'barren+PLURAL' (p.59). A theory with C and V slots would predict that lengthening would be limited to either consonants or vowels (though this criticism does not apply to theories with X-slots – e.g. Levin 1985).

A surprising effect of Z's theory is that concatenation of a prosodically defective morpheme can produce shortening. For example, the Wolof causative *-al* forces degemination of a stem-final consonant: e.g. /seg:-al/ → [segal] 'to press oily products+CAUSATIVE' (p. 97). Here, the suffix's vowel /a/ is argued to be prosodically defective by not having its own mora. On concatenation with the stem /seg:/, it effectively steals (or 'usurps') the geminate consonant's mora, resulting in degemination. A variety of constraints work together to ensure such shortening and to prevent usurpation of vocalic moras (e.g. /be:s-al/ → [be:sal] 'new+CAUSATIVE', *[besal]).

However, the theory goes even further in claiming that prosodically defective morphemes can produce subtraction. For example, certain suffixes in Yine cause outright deletion of preceding vowels: e.g. /neta-lu/ → [netlu]. This situation is analysed much like the Wolof case: the suffix /lu/ is prosodically defective in that the /u/ has no mora of its own. It then usurps the stem /a/'s mora so that the output ends up with a morales [a] which has no phonetic realization, with the same effect as outright deletion.

Z's theory adopts the guiding principle that all morphological operations are additive – i.e. all morphological operations involve concatenation of phonological material, and no concatenative processes involve segmental deletion (cf. Horwood 2001). So, all apparently subtractive morphology must involve the addition of prosodic and/or segmental material. The theory's approach is to combine the proposals about prosodically defective morphemes with Containment Theory (Prince & Smolensky 2004, with later development by several others). Containment Theory does not allow literal deletion; instead, nodes can be marked as phonetically unpronounceable. In the Yine case, for example, the suffix /u/ usurps the stem /a/'s mora, *and* as a side-effect the output [a] is rendered unpronounceable.

For example, there is a morpheme in Mauritian Creole that causes verb bases to lose their final vowel: [vini]~[vin] 'come', [māze]~[māz] 'eat', [koze]~[koz] 'speak' (p. 106). The 'short form' morpheme is a mora, but one that is marked as unpronounceable. For /koze+< μ >/, the suffix's μ usurps the stem /e/. Since the suffix mora is unpronounceable, it renders the [e] unpronounceable, too: [koz<e^μ>]. The result is that only the [koz] of the output is pronounceable, with the phonetic effect of deletion of the final [e].

I should add that an important point lurks here: the Short Form mora is not inherently unpronounceable – its unpronounceability is effected by the language's constraint ranking (which prevents floating moras from being dominated by a higher node). In other words, the behavior of floating moras is

determined by both their prosodic structure and how constraints regulate that structure. These constraints are the essential backbone of the theory, but are sadly too rich and complex to discuss in detail here. Suffice to say that ‘unpronounceability’ is a ‘derived’ property – it is a consequence of the constraint ranking, rather than a representational property.

More extensive subtractions are analyzed as involving higher level prosodic constituents. For example, Murle plural formation is argued to involve an unpronounceable /σ/ (p. 126). The suffixal /σ/ ends up associating to a syllable’s worth of material, rendering it unpronounceable, with the expected phonetic deletion effect: e.g. /keloc+<σ>/ → [kel] ‘flea+PL’, /amotat+<σ>/ → [amot] ‘saliva’.

In some cases, the concatenation of prosodically defective morphemes is argued to have rather surprising effects. For example, the prefixation of a /Ft/ morpheme in Upriver Halkomelem is argued to cause stress shift: e.g. /Ft+ts’etēm/ → [ts’etēm] ‘crawl+CONTINUATIVE’. Here, the prefixal foot usurps the stem’s material, and phonological conditions requiring it to be trochaic result in stress on the initial syllable. This /Ft/ morpheme is argued to have a variety of other effects depending on the environment of application (p. 221).

Some of the most interesting arguments for the theory are found in the fourth chapter. Since the burden of explanation for the theory falls to a great extent on the details of the representation of morphemes, multiple morpheme types are predicted to occur in the same language – i.e. one language may have several different morphemes that behave differently with regard to lengthening and subtraction. For example, the Dhaasanac plural *-am* triggers gemination of final consonants in monosyllabic bases, and vowel lengthening in polysyllabic bases. In contrast, the plural suffix *-anu* causes gemination of monosyllabic bases, but not lengthening in longer ones: e.g. /dúm-anu/ → [dum:anu] ‘tail end’ cf. /fa:jam-anu/ → [fa:jamanu], *[fa:jama:nu] ‘news’ (p.143). The proposal is that the plural *-am* has a morphemic mora and a moraic vowel (/‐a^m/) while *-anu* has a morphemic mora and its /a/ has no underlying μ: /‐anu^u/. The representational difference means that when *-am* docks onto a polysyllabic stem the floating μ must attach to a preceding segment. In contrast, when *-anu* suffixes to a polysyllabic stem the floating μ docks onto the suffix’s [a], producing no stem lengthening. So, the suffixes’ differences in behavior can be ascribed to a minor underlying representational difference.

An interesting example involves Yine, mentioned above. The suffix /wa/ does not undergo deletion next to subtractive suffixes: e.g. /h̥eta-wa-lu/ → [h̥etawalu], *[h̥etawlu] ‘going to see him yet’ (p. 145). Z’s proposal is that /wa/ has two moras – one floating, and one associated to the /a/. The subtractive suffix kills off the floating mora, but that leaves the /a/’s mora to be realized. In other words, the exceptional behavior of /wa/ in the context of subtractive suffixes is due to its underlying representation.

The book provides a fairly extensive typology of theoretical predictions and evidence for them. While the theory relies on Containment Theory to work, Z argues that certain other theoretical devices are no longer necessary, specifically anti-faithfulness constraints (Horwood 2001), and cophonologies (Inkelas & Zoll 2005). In addition, no constraints refer to specific morphemes – instead, all morpheme-specific behavior follows from representational structure, albeit enriched by Containment theory (pp. 321-2).

The theory presented in this book deserves to become influential because it provides the most comprehensive and constrained theoretical account of subtractive morphology, and draws new formal connections between the disparate phenomena of morphologically-induced lengthening and subtraction. In terms of the analysis of additive prosodically defective morphemes, it is probably the most complete work on the subject, with the most extensive evidence. Any theory of subtraction or morphologically-induced prosodic change will have to confront the variety of cases presented here. As for the theory of subtractive morphology, I suspect that the acceptance of the theory will hinge on the willingness to accept Containment Theory as it is such a central part of the proposed theoretical machinery.

In short, I consider this book the most comprehensive work on length-changing morphemes and subtractive morphology. At the very least, it lays out an extensive array of cases that any present or future competing theory must deal with.

References

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