

Nina Topintzi (2010). *Onsets: suprasegmental and prosodic behaviour*. (Cambridge Studies in Linguistics 125.) Cambridge: Cambridge University Press. Pp. xiii + 268.

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In her examination of the suprasegmental and prosodic behaviour of onsets, Nina Topintzi has two aims. The first is to demonstrate that onsets play key roles in a significant range of suprasegmental and prosodic phenomena. The second is to argue that it is sometimes necessary for onsets to have moraic status in order for them to play these roles. (See Churchyard 1991, Hart 1991, Davis & Torretta 1998, Davis 1999 and Curtis 2003, among others, for previous proposals involving moraic onsets.) The book is a valuable contribution not only because it assembles the most relevant examples in a single volume but also because it offers important insights into the theoretical issues surrounding them.

One of the original motivations for moraic theory was to capture the asymmetrical influence of rhyme and onset segments on certain types of processes (Hyman 1985, Hayes 1989). The number and duration of rhyme segments, for example, are often relevant in compensatory lengthening, minimal word requirements and the distribution of stress. Onset segments are very rarely relevant in these contexts. While Topintzi agrees that onsets rarely influence such processes, she rightly points out that this does not excuse the theory from accounting for the limited number of cases where they do.

The book's central claim is that onsets can be moraic but that voiceless onsets are more compatible with moraic status than voiced onsets. Topintzi attempts to correlate the role of voicing in onset-mora compatibility with the role of voicing in pitch variation. While voiced onsets typically lower the pitch of the following vowel, voiceless onsets typically raise the pitch. Raised pitch is associated with greater prominence, which can be phonologised, Topintzi argues, as either high tone or stress.¹ The idea seems to be, then, that voiceless onsets are more compatible with moraic status, due to their prominence-enhancing effect on following vowels. (Towards the end of the book, Topintzi briefly discusses the possibility that onset moras themselves can be tone-bearing units.)

Standing in for the various constraints that might prefer a moraic onset in different contexts is the cover constraint BE MORAIC. (One of the book's shortcomings is that it does not discuss in any detail the group of actual, specific constraints that might require moraic onsets.) Conflicting with BE MORAIC are two constraints prohibiting moraic onsets, with a universally fixed ranking. The higher-ranked constraint, $*\mu/\text{ONS}/[+\text{voi}]$, prohibits voiced moraic onsets specifically. The lower-ranked constraint, $*\mu/\text{ONS}$, prohibits moraic onsets

¹ In many languages, voicing-based pitch variation has evolved into a tonal contrast that replaces the original voicing contrast (Yip 2002, Tang 2008).

generally. By locating BE MORAIC in different positions in the ranking, relative to $*\mu/\text{ONS}/[+\text{voi}]$ and $*\mu/\text{ONS}$, the account predicts three basic types of systems.

When BE MORAIC dominates both of the constraints prohibiting moraic onsets, as in (1a), all onsets will be moraic in the relevant contexts regardless of voicing. Topintzi argues that this is the situation in Bella Coola (Newman 1947, Nater 1984, Bagemihl 1991, 1998), for example, where both voiceless and voiced onsets can contribute to the satisfaction of the minimal word requirement.

- (1) a. BE MORAIC \gg $*\mu/\text{ONS}/[+\text{voi}] \gg * \mu/\text{ONS}$
 b. $*\mu/\text{ONS}/[+\text{voi}] \gg$ BE MORAIC $\gg * \mu/\text{ONS}$
 c. $*\mu/\text{ONS}/[+\text{voi}] \gg * \mu/\text{ONS} \gg$ BE MORAIC

When BE MORAIC ranks between $*\mu/\text{ONS}/[+\text{voi}]$ and $*\mu/\text{ONS}$, as in (1b), only voiceless onsets will be moraic.² This is the situation in Arabela (Payne & Rich 1988), for example, where syllables with voiceless onsets attract stress, while those with voiced onsets do not. When it ranks below both of the constraints prohibiting moraic onsets, as in (1c), all onsets are non-moraic. This is the situation found in the vast majority of the world's languages.

The book's emphasis on the idea that onsets can be moraic appears to be due to the controversy surrounding the idea rather than its pervasiveness in the analyses proposed for the relevant phenomena. Instances where moraic onsets are clearly necessary are hard to come by, even among those languages where onsets have an obvious suprasegmental or prosodic influence. Only a small number of the individual examples discussed actually provide evidence for moraic onsets, and not all of these provide compelling evidence. Overall, however, the evidence presented makes for a compelling case.

The first type of phenomena addressed are onset-sensitive stress systems. Topintzi divides them into two basic types. The first is the type where stress is sensitive to the quality of onsets. In Arabela, for example, stress falls on every odd-numbered syllable from the left, with the rightmost stress being the primary stress (p. 85).

- (2) (,tena)(,kari) 'afternoon'
 (,huwa)(,hani)(,ja) 'peaceful'

When the primary stress would fall on a final syllable with a voiced onset, however, and the penult has a voiceless onset, the primary stress shifts to the penult.

- (3) (,sapo)(,ho)(,sano) 'deceived'
 (,mwera)(,ti)(,tjenu) 'cause to be seen'

² The behaviour of sonorants in this context is not uniform. Sometimes they pattern with voiced obstruents and sometimes with voiceless obstruents. Topintzi argues that they pattern with voiced obstruents in languages where they are specified as [+voice] and that they pattern with voiceless obstruents in languages where they are unspecified for voicing.

In Topintzi's analysis, the shift is due to the ranking in (1b). Voiceless onsets are moraic, but voiced onsets are not. When the penult has a voiceless onset and the ultima a voiced onset, the primary stress shifts in order to occupy a heavy syllable.

The second basic type of onset-sensitive stress system is the type where stress is sensitive to the presence of onsets. A typical situation is that found in languages like Alyawarra (Yallop 1977), Aranda (Strehlow 1944), Banawá (Buller *et al.* 1993) and Iowa-Oto (Robinson 1975), among others, where a default initial stress shifts from an initial syllable without an onset to a peninitial syllable with an onset. In the Banawá pattern, for example, stress occurs on every odd-numbered syllable from the left in consonant-initial forms, but it occurs on every even-numbered syllable from the left in vowel-initial forms (p. 59).

- (4) 'tati,kune 'hair'
u'fabu,ne 'I drink'

Less typical is the situation, as in Dutch (Booij 1995), where stress can compel the insertion of a consonant to provide an onset (p. 64).

- (5) /paelja/ [pa.'ʔel.ja] 'paella'
/aorta/ [a.'ʔɔr.ta] 'aorta'

Topintzi argues that stress systems that are sensitive to the presence of onsets should be analysed not by assuming that onsets are moraic, but by employing an alignment constraint that requires the left edges of stressed syllables to align with a consonant (see Goedemans 1996 and Hyde 2007 for related proposals, and Smith 2005 for an alternative). Her reasoning is that, apart from stress attraction, syllables with onsets in such systems fail to exhibit the properties of heavy syllables, such as satisfying minimal word requirements.

While alignment constraints are always employed in analyses of stress that are sensitive to the presence of onsets, it is clear that moraic onsets resulting from the ranking in (1a) could also make stress sensitive to an onset's presence. Syllables with onsets would be bimoraic and would attract stress, while those without would be monomoraic and would fail to attract stress. Topintzi's account, then, still predicts the existence of stress systems where all syllables with onsets display the full range of properties associated with heavy syllables, although examples of this type are not provided. (Nevins 2009 argues that Arrernte (Strehlow 1942, Breen & Pensalfini 1999) is a potential example.)

The second phenomenon examined is onset-triggered compensatory lengthening, the lengthening of vowels to compensate for the deletion of a segment that would otherwise have been an onset. The primary example is Samothraki Greek (Katsanis 1996), where *r*-deletion is accompanied by lengthening of the following vowel in contexts where the *r* would clearly have emerged as an onset (when it is word-initial or the final consonant in a cluster) (pp. 102–103).

- (6) 'rafts > 'a:fts 'tailor (MASC)
'protus > 'po:tus 'first
'aspra > 'aspa: 'white'

While such cases do not provide evidence for moraic onsets – the ‘onset’ has been deleted – they do provide evidence against the onset–rhyme asymmetry on which the traditional mora-based account of compensatory lengthening rests. In the traditional account, compensatory lengthening results from the deletion of an underlyingly moraic segment. When the segment deletes, its orphaned mora finds a home on an adjacent segment, and the adjacent segment is lengthened as a consequence. It is crucial that the triggering segment be in the rhyme, under this account, rather than an onset, because only rhyme segments can be moraic.

In accommodating cases like Samothraki Greek, Topintzi dispenses with the traditional requirement that the trigger of compensatory lengthening be an underlyingly moraic segment and, consequently, the requirement that the trigger be a rhyme segment. For Topintzi, compensatory lengthening is simply a form of position preservation. When a segment deletes, a mora acts as a sort of trace of the deleted segment. It attaches to an adjacent segment, resulting in lengthening. If the mora is not already present underlyingly, then one is simply inserted. The process is the result of the POSITIONAL CORRESPONDENCE constraint (p. 107).

(7) POSITIONAL CORRESPONDENCE

An input segment must have an output correspondent either segmentally by means of a root node or prosodically by means of a mora.

In addition to accommodating an account of onset-triggered compensatory lengthening, Topintzi’s approach achieves another important result. The traditional requirement that the trigger of compensatory lengthening be underlyingly moraic is inconsistent with Richness of the Base, the idea that the grammar cannot restrict the range of possible inputs in order to influence the range of possible outputs, one of the central tenets of standard Optimality Theory (Prince & Smolensky 1993). If a certain type of consonant *C* always deletes in a certain context, triggering compensatory lengthening, Richness of the Base prevents an OT account from assuming that *C* is always moraic underlyingly; inputs with non-moraic *C* are always possible and must also yield the appropriate outputs. An OT account, then, must produce compensatory lengthening in the appropriate context whether *C* is underlyingly moraic or not. Topintzi’s approach achieves this result.

The book turns next to the ability of onsets to help satisfy minimal word restrictions. While the single example discussed at this point, *Bella Coola*, provides fairly convincing evidence that onsets can contribute to the satisfaction of a minimal word requirement, the evidence that they do so as a result of their moraic status is not particularly strong. In *Bella Coola*, VV and VC sequences both satisfy the minimality requirement, as might be expected, but CV and CC sequences also meet the requirement. Only V and C words are excluded. It is the equivalence of CV to VV and VC that makes it clear that onsets help to satisfy the minimal word restriction.

That onsets contribute to the minimal word does not necessary mean that they are moraic, however. The problem is that the minimality restriction might easily be accounted for in terms of segments: a word must contain at least

two. There is no need to assume in addition that the two segments are both moraic, and there is no need to assume that onsets, in particular, are moraic. Topintzi recognises this problem. To strengthen the case, she argues that moras are crucial in other aspects of Bella Coola phonology and morphology, such as the root-maximality requirement, so they are probably crucial in the minimality requirement as well. The argument is not particularly convincing, especially when we realise that onsets are crucially *non-moraic* in the other relevant contexts in Bella Coola.

The final cases that the book examines in detail are those involving geminate onsets. Following Churchyard (1991), Hart (1991), Davis & Torretta (1998) and Davis (1999), Topintzi applies the traditional view of geminate consonants (Hayes 1989) to geminate onsets, in that she assumes that they are moraic. She also departs from the traditional view, however, in that she takes multiple linking to be unnecessary for producing the geminate's additional length, assuming instead that length is a phonetic interpretation of moraic status. Although the length difference between the moraic onsets in the geminate cases and the other cases of moraic onsets mentioned above is simply a matter of phonetic interpretation, the additional length does provide independent evidence of moraic status for the geminates.

Topintzi focuses on two languages in this context – Pattani Malay (Yupho 1989, Hajek & Goedemans 2003) and Trukese (Dyen 1965, Goodenough & Sugita 1980) – and briefly discusses several others. In Pattani, onset geminates can be produced by compensatory lengthening. This situation differs from the cases of compensatory lengthening discussed earlier in the book, in that the onset is the lengthened segment rather than the triggering segment, a situation that actually does provide evidence for the onset's moraic status. Onset geminates also participate in a second weight-based process: the attraction of stress. When an onset geminate is present, it attracts stress from its default position over the final syllable.

As in Pattani, onset geminates in Trukese can result from compensatory lengthening. In Trukese, however, they also help to satisfy minimal word restrictions. Minimal words can be either syllables containing a long vowel, (C)VV, or syllables with a geminate followed by a short vowel, CCV. Words consisting only of CV or CVC syllables are not permitted.

The languages with onset geminates present the most compelling cases for moraic onsets not only because the fact of gemination provides a sort of independent corroboration but also because onset geminates participate in multiple weight-based processes in each case – compensatory lengthening and stress attraction in the case of Pattani and compensatory lengthening and minimal word satisfaction in the case of Trukese. It is a bit of a shame that they come so late in the book.

Overall, the book is well written and very readable. It assembles enough evidence for the influence of onsets on suprasegmental and prosodic processes, and even for the possibility of moraic onsets, to challenge even the most sceptical. It also bears on several important theoretical issues, including not only moraic theory but also Optimality Theory, Richness of the Base, tone, metrical stress theory and the theory of geminates. It is a significant and welcome contribution to the field.

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