1. Introduction

This book, an updated and revised version of the author’s 2006 doctoral dissertation (Topintzi, 2006), makes the proposal that onset consonants, just like coda consonants, may be moraic. That is, onset consonants may bear a mora in specific languages. And just like in the case of the coda, in some languages only specific types of onset consonants (e.g. voiceless obstruents) bear a mora. Onsets with non-moraic consonants are represented as in (1a), as opposed to moraic onsets, which are represented as in (1b) (cf. p. 8, 35):

\[
\begin{array}{ll}
\text{a. Non-moraic onsets} & \text{b. Moraic onsets} \\
C V & C V \\
\sigma & \sigma \\
\end{array}
\]

In the ‘standard’ theory (of which Hayes, 1989, 1995 is representative), consonants may or may not be moraic only in coda position: syllable-final consonants may or may not make a syllable heavy, syllable-initial consonants never do. Topintzi argues that the potential for moraicity should be extended to onset consonants, so that they, too, can make a syllable heavy. In this review I will give examples of the kinds of evidence that the author brings to bear on this issue, by going through the different chapters in the book and commenting where appropriate.

The book is divided into seven chapters. The first chapter lays out the theoretical background – why is a change to a generally well accepted and empirically successful theory, i.e. moraic theory (Hayes, 1989, 1995) advocated? The second chapter presents the evidence that onsets can play a role in stress assignment. This chapter forms the main part of the dissertation. Three cases of onset influence on stress are distinguished: languages in which the shear presence of an onset has an effect on stress assignment, languages in which the segmental composition, i.e. the quality, of the onset plays a role, and languages in which both the presence and quality of onsets matter. Chapter 3 deals with compensatory lengthening and mostly consists of a discussion of Samothraki Greek, in which onset-r deletion leads to vowel lengthening. Chapter 4 documents and analyses a number of cases in which onsets are relevant to word minimality constraints. This chapter contains a discussion of Bella Coola. Chapter 5 deals with moraic onset consonants, i.e. geminates in the onset, and chapter 6 presents a number of other cases in which onsets are involved in the prosody of the language. Chapter 7 contemplates a number of alternatives to the theory outlined in the book and presents a conclusion. The subject index to this book is a little brief, but the language index bears out the rich variety of source material the author has used.

2. Onsets and stress assignment

In a very large majority of languages, onsets do not interfere with stress assignment or other phenomena that are usually considered to be based on, or intimately related to, prosodic structure, such as compensatory lengthening, templatic processes such as hypocoristic formation, etc. Both for stress assignment and these other prosodic phenomena, two factors are usually crucial: vowel length and whether or not coda consonants count as “weightful”, i.e. make a syllable heavy. Of
course, in many languages stress assignment does not depend on weight at all: such languages are quantity-insensitive. In quantity-sensitive languages, long vowels and/or closed syllables may attract stress. This is the reason why short vowels are distinguished from long vowels as having one and two moras (or weight units by another name), respectively, and why there is an optional rule (or constraint) of assigning a mora to a consonant closing a syllable. The rule is referred to as ‘weight-by-position’ (see Hayes, 1989 and many others). In constraint-based approaches the weight-by-position rule is replaced by a weight-by-position constraint.

The proposal advocated in Topintzi’s book is a kind of mirror image of weight-by-position: the author proposes that onset consonants, in less frequent cases, can also be assigned a mora, so that they can behave on a par with coda consonants: making a syllable heavy, causing compensatory lengthening when lost, providing weight to satisfy word minimality, and so on. On the basis of such evidence, Topintzi argues, the standard theory should be changed so as to allow onset consonants also to bear a mora. The standard theory rules this out by stipulation. Note that, historiographically speaking, this proposal goes back a step to earlier syllable structure theories in which all consonants are treated on a par, with all of them having timing or x-slots (Levin, 1985) or in which onsets start out with weight units but lose these, unlike coda consonants (Hyman, 1985).

The crucial discussion is a general scientific one: should we reject a theory when there is one, or a handful of cases, which suggests some theory or hypothesis is wrong? From a rigorous scientific-method point of view, the answer should be affirmative. Albert Einstein said: “A thousand experiments cannot prove me right, a single experiment can count me wrong” (Calaprice, 2005). Of course, before a theory is modified the evidence against it should be presented, confirmed, scrutinized, turned over and over again, inspected from all sides, set aside and chewed over for a while, and then re-scrutinized. Besides, data in itself is not enough to discard an old theory: there should be a coherent alternative replacing the old theory, and its predictions should be laid out in detail. This book claims to do both things: that it has provided evidence of this kind of quality, and that it presents a theory that is better able to account for the full range of facts. In my view, its analyses deserve serious consideration and squarely puts the ball into the standard theorists’ court. In other words, it offers a delectable challenge to those who wish to defend the standard theory. Let us see – briefly – how the argument goes and how the future of this argument might run.

Cases of onset sensitivity have been noted before in the literature, also by Hayes (1989). Hayes (1995:7) (cited by Topintzi on p. 7): “Onset segments are prosodically inert […] While this claim is not fully valid at the observational level, it is so well supported that it serves as the central observation for formal theories of syllable weight”. Thus, the empirical observation that onsets are sometimes prosodically relevant is not new: rather, Topintzi puts forward the view that moraic theory should be modified on the basis of these cases. Again, this is fully justified on the basis of the scientific method, if we want our theories to be more than just a description of what is more or less common, even if onset-insensitivity is very much more common. If we want our theories to be an exact description of what is and what is not possible in human languages, then they should account for all cases that are found and not predict any that do not occur. In other words, on this viewpoint, commonness should play no role in the design of a theory. An interesting discussion concerns the relation of markedness with the design of the theory: the question is if, and if so how, onset sensitivity, as a marked feature of languages, should be reflected in a theory that, in principle, allows both. What we wish to avoid, at any rate, is a theory that does not match the empirical basis.

Let us inspect a case of onset sensitivity for stress: in Karo (p. 9 and references cited there), a voiced onset in the last syllable repels stress: cf. nahe’k ‘fontanel’ with final stress and ci’gig ‘spot’, which has initial stress (boldface indicates stress here). In Karo, “default stress is word final, unless some requirement, i.e. tone, nasalization or onset voicing causes shift from that position” (p. 9). Thus, the fact that [ci’gi] has a voiced stop in the second syllable repels stress away from this syllable. The case is discussed in more detail on pp. 39 ff, with full attention to the many details and possible re-analyses. To analyse the data, the author claims that in this language voiceless obstruents and sonorants are moraic onsets, and voiced obstruents are not (p. 44). Implementing this in Optimality Theory, the author adopts a constraint which generally favours mora assignment to all segments (BeMORaic, from Moren, 2001), a constraint against assigning moras to voiced obstruents (*μ/Ons/[+voi]), and a constraint against moraic onsets (*μ/ONS), which, of course, is low-ranked in languages that display these kinds of effects and high-ranked if there are no such effects. The result is that the optimal representation of words with an initial voiceless obstruent have two moras in the first syllable: one on the consonant and one on the vowel. As such, it attracts stress under the influence of the Weight-to-Stress principle (or constraint): Heavy syllables are stressed (Prince, 1990). While the Karo case is considerably more complicated than this, this is the core of the analysis.

We need to ask the question whether reference to moraic structure is strictly necessary here. Topintzi also discusses a possible alternative account (Blumenfeld, 2006), in which stress is lexically determined and voicing is predictable. This proposal is rejected especially because the stress pattern is so regular that it seems counterintuitive to assign it to the underlying structure: if stress placement were truly unpredictable, we would expect to find a wider range of stress positions than are encountered in actual fact.

In a theory as rich with analytic possibilities as Optimality Theory, there might still be other ways of reanalysing these data without recourse to moraic onsets. For instance, it might be possible to draw up a constraint militating against the presence of a voiced obstruct in a stressed syllable (*Str/Voi), without reference to moras (quite on a par with a situation in which, for instance, nasalized or high vowels reject stress: such vowels are still moraic but the language is subject to a constraint like *Str/[+hi]). A constraint like this might be grounded in the phonetics, and, if suitably formalized, could be extended to account for tonogenesis phenomena. For Karo, the constraint in question only needs to be dominated by a
constraint requiring stress on syllables with a high tone (or nasalization). In case the final two syllables both have voiced onsets (as in the cases discussed on p. 47), default final trochaic stress is assigned. By no means is this intended as a serious re-analysis of the wealth of Karo data, but it might indicate the direction into which proponents of the 'standard' theory might seek a solution.

Another question can be raised at this point. If Karo voiceless obstruents are moraic, as the author proposes, why are they not long? The usual representation of long (or lengthened, or geminate) consonants is to give them a mora, while singleton consonants have none. See for instance, Hayes' representations of single vs. geminate medial consonants in Italian (cf. Hayes, 1989:259):

\[
\begin{array}{c}
\text{[fato]} \text{ 'fate'} \\
\text{[fat:0]} \text{ 'fact'}
\end{array}
\]

In this case, there is a splendid correlation between length and moraicity: non-moraic consonants are short and moraic consonants are long. Note that no such correlation exists in final position: a moraic consonant, having gained its mora as a result of weight-by-position, does not become geminate either. The same must be claimed by Topintzi: the voiceless obstruents in Karo which have gained a mora as a result of the constraint interaction above, do not become long (as far as the descriptions that are available allow one to conclude). In this perspective, a re-evaluation of the relation between consonant length and moraic structure would have to be necessary. Moraicity would seem to become a rather abstract, notational device, rather than a property rooted in phonetics. This topic is discussed by Topintzi in chapter 5.

The second case of onset influence on stress assignment comes from Aranda and other comparable languages. In this language, the mere presence of onsets determines where stress goes: stress the first syllable if onsetful, otherwise stress the second one (p. 58), e.g. rátama 'to emerge' vs. ergúma 'to seize'. Obviously this is captured by an alignment constraint of some sort and reference to moraic onsets is not necessary. The author briefly considers but dismisses (p. 73) an analysis in which onsetless syllables are monomoraic and onsetful syllables are bimoraic and thus heavier. Quite the contrary, there is evidence in these languages that onset consonants are not moraic. Thus, this case illustrates that onsets may have an effect on stress assignment, but does not actually form crucial evidence for the main thesis of the book, that onset consonants may be moraic.

The final case in this chapter comes from Pirahá, a language which has been subject to a great deal of analysis. In this language, Topintzi claims, voiceless syllable-initial obstruents are assigned a mora, just like in Karo. This helps the author to derive a weight scale in which syllables with a voiceless onset obstruent are heavier than syllables with a voiced onset. Again, the data are rich and complicated, and reanalyses will have a tough time picking holes in the account proposed by the author.

Finally, note that both Karo and Pirahá are partly tonal languages. Of course the interaction between consonants and tone, as in tonogenesis, has been better studied (at least so far) than the interaction between onsets and stress. It is possible that some cases from the literature that are really tonal have been misanalysed as involving stress. Onsets, of course, have led to tone assignment in many cases. There is, however, no evidence that tonogenesis is related to weight, or moraicity, of onsets: tonogenesis is, rather, a process that is best explained at the level of the individual segment with respect to laryngeal features.

3. Onsets and compensatory lengthening

If onsets are moraic, then we expect to find cases where a neighbouring vowel is lengthened after such an onset has been deleted. Just like it is rare to find cases where stress assignment is sensitive to onsets, there are few cases where lengthening occurs after onset deletion (Hayes, 1989:281). The main argument in chapter 3 comes from Samothraki Greek, where earlier clusters such as pr- have been changed to p, with concomitant lengthening of the vowel (protus > potus 'first'). Hayes (1989) also briefly discusses the facts of Samothraki Greek and suggests an alternative analysis in terms of previous vowel insertion (hypothetical [pirotus]) and only then r-deletion and long vowel formation. This account is rejected by Topintzi, because initial singleton r was also deleted and also caused compensatory lengthening. Informal measurements of the vowels resulting from r-deletion are presented, which show that the language has developed a real length contrast (with a small printing error on p. 103: vowels with a length of 0.270 ms are very short). The historical scenario of this change is not completely clear. This is important for our main theme, viz. of whether an onset consonant like /r/ may have been moraic or not. In the current language, there is a vowel length distinction and no evidence for an underlying /r/ in words like potus (<protus) 'first', although some morphological alternatives point to underlying /r/ in some cases (see Kiparsky, 2008, who also discusses the case of Samothraki Greek and rejects Topintzi's account, by stipulation as far as I can see). The most straightforward analysis would be that moraic /r/ was deleted with simultaneous lengthening of the vowel, as in the author's
account. However, an alternative account would be that the vowel lengthened first, and that /r/ was later lost. Not all vowel lengthening rules are necessarily cases of compensatory lengthening, so in such a case it is not necessary to assume that /r/ ever had a mora.

It should be pointed out that although the author has used all available sources for this language, both published and unpublished, as well as data from personal communication, some issues remain that might have been resolved by way of direct, on-site phonetic verification. Although this might well have been within the scope of a complete PhD project by itself, it is a pity that the exact distribution of this phenomenon, and its current status in modern Samothraki, are not as firmly established as might have been possible.

Again, imputed moraicity of /r/ does not make it long, nor does (or did) this mora interfere with stress assignment: stress assignment in Greek in general is claimed to be insensitive to onset weight (p. 9). Thus, onset /r/ received a mora at some stage, but did not have it underlyingly (which would make it a geminate). The mora on the consonant only ever showed up on the vowel, making the analysis a little abstract. One would prefer to see examples where onset moraicity, gemination and stress assignment are more directly related.

4. Onsets and word minimality

If onsets may contribute a mora, we expect word minimality effects of the type that words consisting of [V] only are ill-formed but words consisting of [CV] are well-formed. Topintzi argues that a case like this is formed by Bella Coola (also known as Nuxalk), whose (complex) facts have widely discussed (Bagemihl, 1991, 1998, among others). The main point to be explained for Bella Coola is that roots consisting of a single vowel (V) or a single consonant (C) are not permitted, while VC, CV and CC roots do occur. If all consonants and vowels are moraic, this can be explained as the result of a bimoraic word minimum. One restriction that Topintzi has to place on this analysis is that onset moras are moraic only in this extremely restricted environment, because assigning moras to onsets in longer words would violate a mora maximality condition. Two possible reanalyses are considered but rejected. The second of these, which would involve a constraint demanding minimally bisegmental words, runs into trouble because the maximality condition is provably based on moras. It would be strange if the minimality condition is based on segments (which are not often counted in phonology anyway), and the maximality condition is based on moras. Perhaps proponents of the standard theory would be willing to accept this discrepancy for the sake of maintaining their vested framework.

5. Onsets and geminates

The chapter on moraic onsets deals with moras that are underlyingly present. As observed above, moraic onsets do not necessarily make a consonant long. The author makes a number of languages for which moraic onsets have been proposed, e.g. Pattani Malay (Yupho, 1989, and other references cited), in which onset lengthening sometimes seems to be morphological (e.g. [tido] ‘to sleep’ vs. [tido] ‘put to sleep’) and sometimes lexical (e.g. [buta] ‘blind’ vs. [buta] ‘kind of tree’). The initial moraic consonants attract stress, which is normally final, thus providing evidence for the idea that initial consonants may be moraic. The author offers a critical discussion of earlier analyses of the stress system as well as its implications for the representation of medial geminates, offering the interim conclusion that the possibility of moraic onsets, together with possible rankings of the relevant constraints in Optimality Theory predict exactly the types of languages that we find.

6. Conclusion

It is refreshing to find a book like this with a clearly demarcated topic and a surprising, new, bold goal. This short review has not been able to do justice to the depth of analysis and clarity of discussion in Topintzi’s book. My goals were twofold: first, to stimulate discussion of the fundamental scientific question whether theories should account for precisely all data (and not just a convenient “better-than-average” subset of these), and secondly to explore to what extent Topintzi is able to argue in favour of the notion that onset consonants may be moraic. In a certain number of cases alternative analyses may be available, while the repercussions of the presented model, e.g. with respect to the interaction between phonetic consonant length and moraicity, needs further investigation.

References


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Available online 16 October 2010