

Contemporary views on architecture and representation in phonology. By ERIC

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This book grew out of a conference under a similar title that took place in 2004 at CUNY. As the title suggests, the book focuses on two fundamental issues in phonology: the architecture of the phonological component and the representation of phonological objects. The book points out that the centrality of these issues has often been ignored since the rise of Optimality Theory. The hope, therefore, is that by offering ‘a coherent view of phonology that is not Optimality Theory based’ (back cover), the book can complement OT and move the field beyond it.

The representations of three phonological objects are discussed in some detail: the speech sound, the syllable, and metrical structure. The term architecture refers to a modular view of grammar, in particular, what modules there are in phonology, the interactions among them, and the interaction between phonology and other parts of grammar.

The book has nineteen chapters. Ch. 1 is an overview written by the editors. It nicely summarizes the goals of the book and the contents of the chapters to follow.

Ch. 2-4 deal with the representation of speech sounds, or feature theory. Ch. 2 is written by G. NICK CLEMENTS, a pioneer in feature geometry. He first argues for the importance of distinctive features and against ‘a tendency to reduce or eliminate the role of features’ (p20). He then proposes a theory called ‘feature economy’, or $E = S/F$, where S is the number of sounds (phonemes) in a language, F the number of features needed to distinguish S, and E the value of

feature economy. Clements suggests that there is a pressure for every language to maximize its E, which could be achieved in two ways. First, a language can try to increase S without increasing F (by filling distributional gaps with new sounds). Second, a language can try to decrease F without a significant decrease in S (by dropping some 'odd sounds' that require extra features). The theory makes some strong predictions; in particular, feature economy is a driving force in sound change and the E value of a language should increase over time. This is, presumably, not always the case, even though Clements tried to gather supporting evidence from the UPSID database. Therefore, Clements proposes some additional constraints: avoiding marked features, favoring 'robust' features, and enhancement (adding or favoring features if they can enhance perception). These constraints can conflict with feature economy and with each other, a point that would resonate with Optimality Theory.

The importance of features is echoed by MORRIS HALLE (Ch. 3) and BERT VAUX (Ch. 4). However, some questions remain in feature theory itself. For example, Halle questions Clements's choice of certain features, in particular [palatal] and [voice]. Similarly, Vaux asks whether features should be binary, equipollent, or privative, whether we should assume full specification or underspecification, and how markedness is determined. Vaux also questions the nature of feature economy (is it an intentional plan of the mind or an emerging result of competing forces?), and points out some pitfalls in using phonemic corpora.

BERT VAUX and ANDREW WOLFE wrote the lead chapter on syllable structure (Ch. 5), followed by three commentary chapters. VW offer a theory of 'appendix', or how to treat an extra C before or after a syllable. Evidently, once appendices are excluded, syllable structures become simpler and the sonority sequencing requirement is better observed. VW propose that an extra C must be attached to a higher prosodic unit (e.g. a foot or a P-word), and a language can

choose whether to allow such an attachment and to which prosodic level the attachment is made. It is worth noting that, since a word can contain two or more feet, if appendices can attach to a foot, extra Cs can be found in word-medial positions, which does not seem to happen in English at least (Borowsky 1989, Duanmu 2008).

CHARLES CAIRNS (Ch. 6) points out that VW need a rule to deleted Cs that cannot be appended to a host, but if so, we can simply state where to delete C's, without requiring other C's to find a host. Therefore, the notion of appendix seems redundant. Cairns also questions the need for higher prosodic categories and the validity of the sonority sequencing requirement. G. Nick Clements (Ch. 7) points out that, while sonority may play a role in syllable structure, it can conflict with other requirements. For example, a voicing agreement requirement on a CC cluster, whether it is an onset or a coda, can reduce the sonority sequencing quality. Finally, ERIC RAIMY (Ch. 8) suggests that VW's requirement for every C to be either an appendix or part of a syllable is too strong. Instead, at least in some cases, C can simply be free, as in Nxaʔamxcín, or in a degenerate syllable (with an empty nucleus), as in Thao.

In Ch. 9, WILLIAM J. IDSARDI offers a parameter-based metrical theory that can generate all possible patterns. The theory is a revised version of 'Simplified Bracketed Grid' (Idsardi 1992). In SBG, only one side of a metrical constituent needs to be specified, instead of specifying both sides. SBG contains parameters for 'projection rules' and parameters for 'grouping rules'. The parameters can yield 32 possible sets of grouping rules, and each set corresponds to a finite state automaton (FSA). In order to translate grouping rules to FSAs, Idardi made some changes to SBG. For example, 'avoidance constraints' (e.g. avoid building a metrical boundary that would create a stress clash) are replaced by rules that would build offending boundaries anyway, followed by rules that would delete them. Such revisions would

presumably yield more efficient FSAs. Finally, Idsardi argues that, while it is possible to represent metrical patterns in Optimality Theory, such representations would translate into more complicated and less efficient FSAs.

In Ch. 10, B. ELAN DRESHER argues that SBG works well for Tiberian Hebrew. In addition, Tiberian Hebrew requires ordered rules that create surface opacity, which is a problem for classic OT. In Ch. 11, HARRY VAN DER HULST argues that primary and secondary stresses should be assigned in different ways. In Ch. 12, CHARLES REISS proposes a further simplification of SBG: instead of using ‘directed’ foot boundary marks (i.e. left or right bracket), we can use ‘non-directed’ marks (a simple vertical line). In addition, Reiss doubts the usefulness of translating metrical rules into FSAs or using such translations to compare the merit SBG and OT.

Under the section title Architecture, ANDREA CALABRESE (Ch. 13) offers a modular view of phonology, which contains a universally ranked set of markedness statements and a universally ranked set of repair options. In speech production, an underlying form first enters a checking component, where it is examined against markedness statements and its marked properties are indicated. If the form is good enough, it exits phonology and moves on to other modules; otherwise the form is sent to a repair component, where changes are made according to repair options. The revised form is looped back to the checking component to see if further repairs are needed. Calabrese further proposes that a language can choose to ‘deactivate’ some markedness statements or repair options; the result is to allow some marked structures. Markedness also drives sound change, in that a marked form is changed to an unmarked one. On this view, sound change involves activating markedness statements or repair options that used to be deactivated. Another point of interest is that repairing one markedness violation may lead to a new violation. In other words, some markedness statements may call for conflicting repairs.

Although there is not much discussion on how markedness statements or their ranking are determined, it seems uncontroversial that different languages can treat markedness differently. Still, ELLEN M. KAISSE (Ch. 14) makes a criticism of Calabrese's view that sound change is realized through lexical diffusion. In addition, KEREN RICE (Ch. 15) argues that markedness may not be the only factor in sound change, and that the markedness of a feature may depend on whether it is in contrast with another.

The final four chapters explore various other issues. In Ch. 16, JULIETTE BLEVINS cautions that some recurring patterns in synchronic phonology may not imply phonological generalizations or universals. Instead, they could be due to accidental factors or diachronic inheritance. In addition, patterns in sound change are often attributable to phonetics or general cognition, instead of phonological requirements. In this theory, which Blevins (2004) calls Evolutionary Phonology, interactions of non-phonological factors can give rise to apparent phonological generalizations, which are, in effect, artifacts or illusions.

In Ch. 17, THOMAS PURNELL argues for a fairly common but controversial view, according to which phonetics and phonology are two separate components, phonology should be studied in its own right, and we should not use phonetics to explain phonological patterns.

In Ch. 18, MORRIS HALLE and ANDREW NEVINS offer a rule-based analysis of Slavic morphophonemics. They argue that rule ordering is needed, exceptions are possible, and a distinction exists between cyclic and non-cyclic components, which can have different rules or ordering.

In Ch. 19, Eric Raimy compares two approaches to reduplication, one based on Prosodic Morphology (PM) and one based on Precedence-Based Phonology (PBP). In the PBP approach, morphology is separate from phonology. Reduplication takes place in morphology, where an

arrow extends from a sound in the input string to a sound earlier in the string. The domain of the arrow represents the domain of reduplication. The arrow is not prosodically constrained, but if morphology is followed by phonology in a modular grammar, a prosodically illicit output from morphology can be repaired in the phonological module, and the final output can still be prosodically well formed. Raimy concludes that PBP is better than PM, because a modular grammar enables us to separate morphology from phonology and to simplify both.

It is nice to find such a wide range of topics well covered in a single volume, which can serve as a useful reference. It is also heartening to see people working diligently on important issues that are overlooked by the mainstream. This is healthy for the discipline, given how much is still unknown in the field of linguistics. Indeed, many of the issues remain unresolved and the studies in this volume have raised more questions than the agreements they have reached, if any. The purpose of the book, which is to offer ‘a coherent view of phonology that is not Optimality Theory based’ (back cover), seems less important, whether it is achieved or not, because the distinction between OT and non-OT is not always clear cut, especially in view of recent developments (e.g. McCarthy 2008). In addition, some proposals in the volume seem quite amenable to an OT interpretation. Moreover, some issues, such as how to define markedness, or how to determine the proper degree of feature specification, are so fundamental that they transcend the difference between derivational and OT approaches. The reader might be disappointed that not many solutions to outstanding problems have been found. On the other hand, the reader might be pleased to learn that there are plenty of opportunities for one to make new contributions.

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