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English Sound Stucture [Book Review]

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of the language to identify the lexical units that must be learned. Because so much of rhythm is specific to particular languages, there is again the strong implication of real learning.

Finally, MICHAEL KELLY and SUSANNE MARTIN'S chapter is the one of the fourteen to argue most directly for learning. The thesis is that people learn language because they are sensitive to the statistical properties of the input—to the frequency of different patterns and to the contingencies obtaining between different sorts of events. They argue further that this learning is not special, not specific to language, not even to humans. All this is backed up by data. Kelly and Martin argue that the regularities of language as a whole may emerge in the confluence of many processes, each of which is at its core a statistical assembly—phoneme recognition, word segmentation, sentence parsing, and assignment of words to syntactic categories.

In other fields of science, it is a significant contribution to unify phenomena in some domain with known-to-exist processes in other domains. Thus it is a shame that none of Kelly and Martin's thought-provoking ideas are addressed by the other authors. We are left with the strong impression of a field about to change its theoretical foundations.

Together, the chapters represent society's usual array of responses to impending change—some holding back, some looking the possibility of change full in the face, and some very few, one in this case, charging ahead with the new. We predict that in the next writing of a book on the acquisition of the lexicon, the ratio of chapters arguing for the reality of learning will not be one out of fourteen.

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English sound structure. By JOHN HARRIS. Oxford: Blackwell Publishers, 1994. Pp. ix, 317.

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This is a welcome addition to a growing number of textbooks in phonology. Like Giegerich 1992, Harris explores theoretical issues using data primarily from different dialects of English; unlike Kenstowicz and Kisseberth 1979, Lass 1984, or Kenstowicz 1994, he introduces current theory with no review of traditional issues, representations, or notations. Assuming that students already understand orthodox phonology (Chomsky & Halle 1968), H discusses recent theoretical proposals and argues for a single coherent analysis based on universal principles which apply to both syntax and phonology.
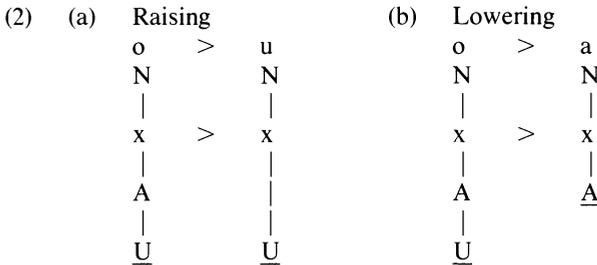
In Ch. 1, 'Sounds and words', H outlines the relationship of phonology to morphology, syntax, semantics, and the lexicon and distinguishes between root-level and word-level alternations. He discusses the importance of Universal Grammar and explains why linear rewrite rules and derivations are less highly valued than more constrained descriptions based on a small number of principles and parameters.

Ch. 2, 'Constituency', describes the English syllable using only three elements—onset, nucleus, and rhyme—each limited to binary branching. Assuming the standard sonority hierarchy, H argues that phonotactic asymmetries provide evidence for constit-
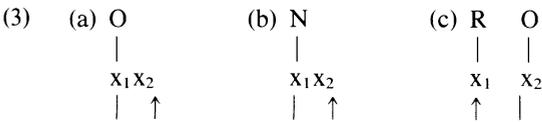
uency in onsets and nuclei. A rhyme is the maximal projection of a nucleus, and because rhymes may only have two branches, an English coda occupies a single postnuclear position, not the two or three coda positions proposed elsewhere (Giegerich 1992, Kreidler 1989). Thus, the word <wept> is represented (80) with the word-final consonant as an onset to an empty rhyme as in 1, H's 63b.

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(1)  O    R    O
     |         |
     |    N    |
     |    |    |
     x    x    x    x
     |    |    |    |
     w    ε    p    t
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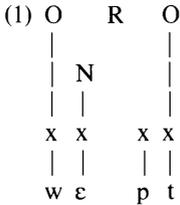
Ch. 3, 'Melody', proposes autosegmental representations of vowels and consonants and discusses privativeness, inalterability, tiers, and geometric representations. In this chapter, H presents twelve elements: ten basic subsegmental primes plus L and H (used for voice onset time as well as tone and accent). He explains lenition as the loss of segmental elements, that is, a 'decrease in the melodic complexity of a segment' (122) and illustrates how raising, lowering, diphthongization, monophthongization, centralization, and coalescence are formalized as simple operations on three elements (plus an assumption of headedness). For example, the representations of raising or lowering a mid vowel (113) both involve the suppression of a single melodic prime as shown in 2.

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(2)   (a)   Raising              (b)   Lowering
            o    >    u                 o    >    a
            N         N                 N         N
            |         |                 |         |
            x    >    x                 x    >    x
            |         |                 |         |
            A         |                 A         A̲
            |         |                 |
            U̲         U̲                 U̲
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Ch. 4, 'Licensing', draws heavily on Kaye et al. 1990. The primary claim is that relations between adjacent positions are asymmetric; in any pair, one segment must act as head. All pairs are left-headed within onsets and rhymes, and each position must be licensed or bound by an adjacent position. In rhyme-onset sequences, however, an onset governs the coda to its left. In all cases, a segment in a governed position cannot be more complex (have more elements) than the one that governs it, and segments appear in surface structure only when licensed; for example, /r/ is licensed only for onsets in nonrhotic dialects. The governing domains illustrated in 3 are universal (168), and language-specific parameters determine whether or not structures can branch or be licensed.

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(3)   (a) O              (b) N              (c) R    O
          |                  |                  |    |
          x₁ x₂              x₁ x₂              x₁   x₂
          |__ ↑              |__ ↑              ↑ __ |
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Ch. 5, 'Floating Sounds', provides a principled analysis of the 'distributional peculiarities of /r/ in English' (265), including /r/-dropping, /r/-epenthesis, and the reduced set of vowel contrasts found before /r/ in many dialects. In an epilogue, H asks whether or

not phonology should be identified as an autonomous module of the grammar, and his answer is negative; phonology 'can be distilled into the universal schema **license α**' plus settings on a small number of phonological parameters (271). 'The notion that there exists an independent phonological module, chock-full of language-specific rules, is now obsolescent' (270).

English sound structures is an important contribution and has much to recommend it. It will be a useful resource for nonspecialists, particularly those who share H's theoretical position, and a good textbook for those who prefer to teach only current issues in phonology. The writing is usually clear, and the argumentation is straightforward and jargon-free. H's explanation of why affricates are now treated as two melodic units linked to a single skeletal position (40) is typically lucid. I especially liked the clear descriptions of the ten elements and the elegant account of lenition in Ch. 3. There are a forgivable number of typos, and H almost always defines terms when he introduces them, providing concrete examples (a few terms, including FOOT, are never defined). Original sources are well-documented, compensating at points where more examples would have been helpful.

This 'introductory' text, however, presupposes that students already understand features, linear rules, and the basics of acoustic and articulatory phonetics; in courses where this knowledge is not a prerequisite, instructors will need to supplement. Although the data in the exercises are interesting, my students wanted phonetic transcriptions. Directions to the exercises, which presuppose relatively sophisticated students, could be clearer. Exercises such as the one on 30–31 (using data from tense and lax reflexes of [æ] in dialects of metropolitan New York and Belfast) could have used a few concrete phonetic examples from one of the two dialects rather than the long introductory technical explanation.

A glance through the table of contents and index reveals almost no mention of suprasegmentals. A section on reasons for many of the conventions discussed in Goldsmith 1990 would have been useful early in Ch. 2, which presupposes much of this work. Similarly, students expected to interpret the interesting appendix to Ch. 3 (a brief discussion of the acoustic correlates of the ten elements) will need some basic introduction to acoustic phonetics. Since H cites Hayes 1980, I was puzzled that his complicated description of English noun stress (42–3), does not redefine and incorporate Hayes' elegant analysis.

My strongest reservation is that H presents hypotheses as received wisdom without discussing possible counterarguments to weak or theory-internal arguments of his sources. Like H, Kaye et al. 1990 seek universal principles which underlie both syntax and phonology, but their arguments against the syllable as a basic element are mostly theory internal. Claiming that there is little evidence for rules which refer to the syllable, the primary citation is Aoun 1979, whose argument is also theory-internal. Aoun proposes degenerate syllables as alternative to super-heavy syllables in Arabic and admits (146), 'I don't have any evidence that allows us to choose between these possibilities.' Instructors using *English sound structures* may wish to refer students to Blevins (1995: 207–10) for a summary of sources who have claimed that some phonological processes (pharyngealization, reduplication, language games) are best stated in terms of the syllable. Instructors may also wish to have students explore alternatives to the traditional sonority hierarchy, such as that of Basbøll 1977, 1994.

I chose this book as the primary textbook for an introductory graduate phonology course this semester partly because I like H's clear writing and argumentation and partly because I (correctly) predicted that my students would find the analysis of the syllable interesting enough that they would be motivated to explore counterarguments and alter-

native analyses. So far, the result has been the normal frustration, lots of good questions, and considerable productive discussion of major issues in phonology. My primary goal is to challenge my students to think intelligently about phonology. So far, with help from H, I have not been disappointed.

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Speech, language, and communication. Ed. by JOANNE L. MILLER and PETER D. EIMAS. San Diego, CA: Academic Press, 1995.

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The putative units of spoken language representation and processing are much less discrete than those involved in the production and comprehension of written language. In spoken utterances, phonetic/phonemic segments, syllables, words, even phrases and sentences are 'smeared' together, forming a continuous acoustic signal that must be apprehended by the listener. Moreover, sublexical and lexical units in particular exhibit considerable acoustic-phonetic variability from talker to talker, with changes in speaking rate, and across different phonetic contexts. Such factors have made understanding on-line speech processing an extremely challenging task and forced speech/language researchers to divide the puzzle into smaller, more manageable pieces. Each chapter in this edited volume focuses on a particular piece of this puzzle—namely, speech production, the perception of spoken words, the production of sentences, the compre-