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REVIEWS

Jack Windsor Lewis (ed.), *Studies in general and English phonetics: essays in honour of Professor J. D. O'Connor*. London: Routledge, 1995. Pp. xxii + 473.

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This volume honoring J. D. O'Connor for his contributions to phonetics offers a rich variety of studies that deal largely with topics to which 'Doc' has

himself devoted much of his published work. The thirty-eight studies it includes are preceded by a short foreword (by Sir Randolph Quirk), a very brief account of Doc's pre-retirement career, a listing of his publications, and a helpful overview of the book's contents. The scholarly contributions are in four categories: general phonetics and phonological theory; pitch, intonation and rhythm; the phonetics of mother-tongue English; the phonetics of non-mother-tongue English.

The quality of the essays presented is of the high quality we expect from scholars trained in the London school of phonetics. Within each area covered a range of interests is considered, from the theoretical appeal of A. Fox's 'Principles of intonational typology' to 'narrower' matters of description ('The low vowels of Vancouver English' of H. J. Warkentype & J. H. Esling) and advice on teaching English as a foreign language ('Segmental errors in the pronunciation of Danish speakers of English: some pedagogical strategies' by I. Livbjerg & I. M. Mees). Even more 'practical' concerns are addressed in an account of the present state of the art of speaker identification in Germany (H. Künzel) and an enumeration of factors that should govern the selection of 'Voice types in automated telecommunications applications' (J. Laver). In the interest of brevity comment will be limited to a subset of the papers that I find especially evocative.

I. BASIS OF ARTICULATION

Phoneticians often restrict description to properties believed to identify a speech signal as one particular word sequence and not others in the language, thereby performing a service function for linguists, who on principle neglect 'linguistically irrelevant' phonetic properties. Three papers remind us that phonetic description need not be so narrowly 'functional.' In 'Postura, clear and dark consonants, etcetera' L. van Buuren invites us, from the perspective of a Dutch student of English, to consider a property said to characterize, not segments or other elements, but a LANGUAGE tout simple, i.e. its 'articulatory setting'. He supposes that for any language 'speakers maintain a certain constant equilibrium in the tongue body and lip muscles, which is best described as a vowel "positioning" and indeed should be described before any other tongue and lip activity' (139). In 'Approaches to articulatory setting in foreign-language teaching' B. Collins & I. M. Mees assert that Danish learners of American English can profit from awareness of the 'uvularisation combined with alveolarisation' of AE (419) as against the 'palatalisation plus laryngo-pharyngealisation' of Danish (417). In similar vein J. Kelly ('Consonant-associated resonance in three varieties of English') draws attention to the occasionally reported cross-language differences in the 'resonances' of certain consonants.

That the three just-mentioned papers involve the free expression of subjective judgment is of course in itself no reason to reject their arguments,

for while phonetic intuitions, however widely shared, are not ipso facto true, neither can they be lightly discounted. Nevertheless, this somewhat dubious reader finds these papers more provoking than compelling, and wonders whether it is accidental that they suggest few tests of the propositions suggested (those they do are hopelessly gedankenexperimental in nature) and that no supporting physical data are supplied. Can there not, for instance, be made available ANY physical evidence for the assertion (Collins & Mees, 417) that stop aspiration is explained by an articulatory setting characterized by 'lack of tension' in oral closure, a claim that should unsettle anyone educated to believe (with possibly no more reason) that aspiration is rather a symptom of 'fortis' articulation?

2. ISSUES OF PROSODY

Of the ten or so papers on intonation two should attract wide interest for the two general questions raised: 1) Is it feasible to construct a typology of intonation, defined narrowly as exclusively pitch or F_0 , that can accommodate both its language-specific and its language-universal aspects? (A. Fox), and 2) Can criteria be devised whereby utterances can be unambiguously segmented into 'intonation units'? (P. Tench). Fox assumes that cross-language F_0 differences are partly determined by other non-segmental features, and reaches the tentative conclusion that 'intonational features which are not dependent on the rest of prosodic structure are not significant enough to justify a meaningful typology of intonation' (206). Tench, in worrying the question of how to segment a speech stretch into 'intonation units', compares O'Connor's views with certain others, and finds for the former, arguing that a segmentation based on the metrical foot as defined by Abercrombie and adopted by Halliday too often leads to counterintuitive breaks within syntactically and semantically close-knit word groups. O'Connor's treatment is preferred because it avoids the need to entertain such uncomfortable divisions by allowing rhythm units in which a stressed syllable may be preceded as well as followed by unstressed syllables. It seems unfortunate that at the outset of this illuminating account Tench makes the question-begging assertion that 'if an utterance consists of a single intonation unit, then the boundaries are preceded and followed by silence' (270), and that he nowhere makes explicit why intonation units need always be unambiguously non-overlapping.

Two papers on prosody that report experimental data deal with speech of a special kind, somewhere between the 'citation' forms of the laboratory and spontaneous speech. In 'Spelling aloud: a preliminary study of idiomatic intonation' P. D. S. & M. G. Ashby report some regularities in the 'chunking' of letter names by subjects' oral spellings of certain familiar words: words of more than five letters are broken up into groups averaging about 2.7 letters each, a number that is independent of the number of letters

in the word. They propose a simple computer algorithm for inserting prosodic boundaries in synthesized spellings that yields 'realistic results' (152). And while they initially alert us to the possibility of some role for syllable/morpheme structures, neither element figures in the algorithm, so we are left to suppose that their effect on chunking behavior is negligible. The 56-word corpus sampled does however include a few items, e.g. *timetable*, where the automatic parsing routine should generate syllabically/morphologically counterintuitive groupings. Thus it seems unlikely that *timetable* would be divided into *tim-eta-ble* by a human speller familiar with the form.

In 'Intonational stereotypes: a reanalysis', F. Nolan wants to account for the generally observed tendency for fundamental frequency to fall within a sequence of stressed followed by unstressed syllables, and at the same time to 'decline' over successive stressed syllables: Is this falling saw-toothed F_0 profile the product of an interaction between the two falling contours of different scope, or is it rather the outcome of a rule in which the F_0 of an accented syllable is related solely to that of an immediately preceding one. On the basis of readings of several orderings of the musical expressions $B\# C\# D\# E\# G\#$ under various 'emphasis' instructions, Nolan finds for the interaction model, since the emphasis that raises the F_0 on one item has no effect on the subsequent F_0 contour. Surprisingly enough, as Nolan points out, emphasis has no apparent effect on timing. The reader may wonder why his interesting body of data is not accompanied by any statistical evaluations.

3. ON SYLLABLE BOUNDARY PLACEMENT

Three interesting contributions appeal to syllable boundary placement in treating certain kinds of phonetic variation in British English. Thus J. Baldwin explains the unexpected presence of stop aspiration in the /k/ of *back up* and its absence in the /t/ of *fifteen* as effects of consonant 'capture' by a following syllable, so these words are [bæ.k^hʌp] and [fi.ftin], despite the unorthodox onset and codas that result. He argues for [fi.ftin] because /t/ as [t] instead of [t^h] is otherwise inexplicable. But there are conceivable alternatives: the form might be [fi.f.tin] and not [fi.f.t^hin] because of lack of stress (about which the reader is uninformed), or it might be treated phonemically as /fifdin/, the /d/ devoiced following /f/. (In American English {teen} and {ty} certainly occur sometimes as /din/ and /di/.)

J. C. Wells proposes a 'coda-maximizing syllabification' rule to account for the emergence in RP of the syllabic consonants [m n ŋ l] (which are of course 'old hat' in American English), so that *Italy* as [itl i] derives from an underlying [it.əl.i] via [it.əl.i]. Rather oddly, neither Baldwin nor Wells mentions the possibility of sometimes taking a segment (or segments) as ambisyllabic. This option is explored by J. Local, who uses a speech synthesis system based on a 'co-production' model of speech ('YorkTalk') to compare

the acoustic consequences of alternative syllable divisions. His conclusion, argued on the basis of spectrograms in which the reader may not readily see everything that the author does, is that a syllable division which maximizes ambisyllabicity yields the most realistic output.

4. SEGMENTS: ALTERNATION AND NEUTRALIZATION

Three writers have things to say in this general area. The first (T. Akamatsu) draws attention to the assimilation, in allegro RP, of word-final alveolar oral and nasal stops to an immediately following labial or velar stop or nasal, so that e.g. /t/ > /p/ in *that pen* and /n/ > /ŋ/ in *thin girl*. The author makes two points: 1) that 'as the rate of speech increases, coordination in executing the various articulations necessary in the production of a sound deteriorates simply because the speech organs find it increasingly difficult, in the progressively less time available, to maintain reasonably clear-cut implementation of them' (3), and 2) that these assimilations should not be understood to involve phoneme replacement, but rather to be cases of alveolar-labial and the alveolar-dorsal neutralisation. If the absence of any reference to such conceivable assimilations as /g/ > /b/ in *big boy* or /p/ > /t/ in *lap dog* means that they do not occur, then it would seem that an ease-of-articulation explanation, plausible as it might be, can only be seriously entertained if we suppose that sequences such as [gb] and [pd] involve less 'articulatory effort' than do [tp] and [dg]. The second point has arguably more merit, and is supported by the fact that while underlying /t d n/ may be realized as [p b m] before labials and as [k g ŋ] before velars, they also occur as dentals before [θ ð], as retroflexes before [ɹ], perhaps even as labiodentals before [f v], i.e. as segments that nowhere in English have independent phonological status. It is however not so easy to follow Akamatsu when he asserts that phonetic identity, as of e.g. *ran* and *rang* before *quickly*, implies phonological identity, and that because there are neutralizations in allegro English, therefore this variety of the language possesses a larger number of 'distinctive units' (8).

In 'Assimilations of alveolar stops and nasals in connected speech', W. J. Hardcastle examines assimilation instrumentally. Two questions are addressed: 1) How consistently do English speakers assimilate word-final alveolars to following velars? and 2) Are stops more susceptible to assimilation than nasals? The answers that emerge from electropalatographic data are 1) not very, for there is variation, both within and across speakers, from zero to complete assimilation of the 'underlying' alveolar closure, and 2) there is 'a clear preference for assimilating the nasals' (66). The apparent contradiction between the Akamatsu and Hardcastle findings seems easily resolved. The EPG data come from 'connected speech', but given that this speech was recorded under laboratory conditions of a fairly

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invasive type, we may reasonably conclude that it was far from anything like the casual allegro speech discussed by Akamatsu.

A. Butcher ('The phonetics of neutralisation: the case of Australian coronals') uses direct palatography to examine coronal consonants in several Australian languages, and asks whether neutralization products are 1) phonetically identical with one member of an elsewhere contrasting pair of sounds, 2) 'in-between' sounds, or 3) both sounds used nondistinctively. Butcher finds neutralization products to be in most cases 'in-between' sounds. One question arising from his description of the complex relations among coronals across the languages examined is whether Australian neutralization is true neutralization, like that of final stop voicing in German, or rather the pseudoneutralization of the English post-/s/ stops, in which position there is no underlying voicing contrast to be neutralized.

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