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D. Hirst   A. Di Cristo (eds.)
Intonation Systems: A Survey of Twenty Languages
Cambridge University Press, Cambridge 1998
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The intonation of the following languages is described in the book, each language in a separate contribution (authors and language symbols in parentheses): American English (D. Bolinger: AmE), British English (D. Hirst: BrE), German (D. Gibbon: Ge), Dutch (J. 't Hart: Nl), Swedish (E. Gårding: Sw), Danish (N. Grønnum: Da), Spanish (S. Alcora and J. Murillo: Sp), European Portuguese (M. Cruz-Ferreira: EP), Brasilian Portuguese (J.A. De Moraes: BP), French (A. Di Cristo: Fr), Italian (M. Rossi: It), Romanian (L. Dascâlu-Jinga: Ro), Russian (N. Svetozarova: Ru), Bulgarian (N. Misheva and M. Bikov: Bu), Greek (A. Botinis: Gr), Finnish (A. Iivonen: Fi), Hungarian (I. Fonagy: Hu), Western Arabic (Morocco, T. Benkirane: Ar), Japanese (I. Abe: Ja), Thai (S. Luksaneeyanawin: Th), Vietnamese (Đ.T. Dung, T.T. Huong and G. Buolakia: Vi) and Beijing Chinese (P. Kratochvil: Ch). Thus, all three types of language, with (1) (pure) intonation, (2) lexical-pitch accent and (3) tonemes, are represented.

The individual contributions are preceded by the editors' 'Survey of Intonation Systems'. Besides a general model of prosody, this survey discusses some of the most pertinent, and sometimes controversial, theoretical questions related to intonation, such as stress/accent, declination, yes/no questions, modes and expressivity, focalization and emphasis, etc. A description of the editors' new system of representing intonation called INTSINT is included here, with brief comparisons with some other systems. The present review will, rather than discussing the individual contributions, or some of them, individually, define some broad problems of intonation study and try to show how they are reflected in the respective papers. These problems will be: (1) notation, (2) scope, (3) data, (4) stress/accent, (5) systems, (6) function(s), (7) referencing and (8) non-universals.

Notation

Intonation can be recorded on paper at the following levels: (a) raw acoustic F_0 data as an unnormalized time-function, (2) unnormalized acoustic intonation curve with microvariations (mainly segmental effects) eliminated, (3) frequency-normalized auditory (impressionistic) representation, and (4) structural (phonological) notation. All authors except Bolinger give at least some examples of raw F_0 data. Most contributors make more or less extensive use of the editors' INTSINT system. It presents essentially the same information as the traditional 'dot and tail' or 'dash and tail' systems, but is more categorical and is also graphically more complex. Large-scale experiments into the perception of intonation could decide which of these most popular or a host of other proposals most adequately represent auditory (substructural) perception of speech melody. Structural/phonological representations appear in the book only for those languages whose intonation has been more extensively studied, such as BrE, Nl or Ge, and also for Hu. It is still uncertain whether all non-tone languages can, with respect to their intonation, be represented linearly at the phonological level using one general system of marking similar to phoneme strings at the segmental level. Autosegmental-metrical phonology has proposed one that joins the acoustic level directly to an alleged phonological level, i.e. the ToBI system. After 20 years of more or less successful attempts to use it for many different languages (with a number of modifications), the book under review does not show that ToBI is really a winner. Only scattered examples of this transcription appear in it. It is not neces-

sarily always clear why the individual examples are represented at a given level rather than one of the others. INTSINT is most consistently used for Ro and Ja.

Scope

In an introductory note, the editors inform how they expected the individual contributors to organize their papers, i.e.: Background: 1.1 General Prosodic Characteristics of the Language; 1.2 Theoretical Background and Approach: Description of Intonation Patterns; 2.1 Description of a Basic Non-Emphatic Pattern; 2.2 Mode and Expressivity; 2.3 Focalization and Contextual Effects; 2.4 Phrasing and Textual Organization; 2.5 Other Patterns: Comparisons with Other Intonation Systems; 3.1 Comparison with Other Dialects; 3.2 Comparison with Other Languages: Implications and Conclusions. Few authors adhered to this schema quite consistently. Point 3.2 is missing in most contributions, and point 3.1 only appears in some, apparently for lack of appropriate material.

Data

Various kinds of data can be presented for the purposes of intonation (as almost any other broad phonetic subject), and the classification can be performed along three dimensions: (a) from entirely subjective to (almost) totally objective, (b) from genuinely impromptu to completely memorized (or read), and (c) from colloquial to formal. Bolinger quotes examples mostly exemplifying colloquial speech, but it is not clear which of them represent the author's perceptual memory traces and which are specially constructed for the purposes of the volume. His examples may be described as subjective. An almost opposite case is the data on Ch: Kratochwil recorded an unprepared text read in the studio and treated the F_0 data according to strict statistical models (essentially, multivariate analysis of variance). It should be emphasized that all varieties of data, along all the three dimensions, are relevant. The decades-long discussion about the propriety of 'perceptual' vs. 'instrumental' data is happily over now. The remaining contributions in this volume contain various types of data, and it is occasionally pointed out that completely 'spontaneous' recordings are sadly

missing because of the technical difficulties inherent in the combined requirement of acoustic high-fidelity and naturalness, and the various problems (not only legal) involved in surreptitious speech recording. This difficulty will be overcome by miniature cordless directional microphones and many-gigabyte storage possibilities.

Stress/Accent

In any discussion of intonation it is impossible to avoid the controversial stress/accent distinction. As the editors point out in their survey, the terms are mostly used in two different versions: (a) stress refers to amplitude and duration while accent refers to pitch, and (b) stress is the lexical potential of phrasal/sentential (pitch) accent. There is a complete lack of uniformity in the terminology used by the different authors, and some even speak of word accent and sentence stress. This is one of the central questions of phonetics and it is to be hoped that a discussion of intonation and other prosodic phenomena will soon lead to a common stance and unified terminology. It should not of course be forgotten that the stress/accent problem is not a purely phonetic one. There are important morphological implications, and a third term may be necessary to deal with such languages as Sw and Ja. On the one hand, the Sw lexical 'accents' are almost entirely determined morphologically, which is not the case in Ja. But the chapters on. e.g., EP, BP, It, Ru and Ro show that the morphology/stress interaction may be only partially regular.

System

In his *Dictionary of Linguistics and Phonetics* D. Crystal has this to say about the term 'SYSTEM': '… the term … may be applied to any finite set of FORMALLY or SEMANTICALLY connected UNITS (referred to variously as the ''terms'' or ''members'' of the system), where the interrelationships are mutually exclusive … and mutually defining …' In detail, the term is used differently in structural linguistics, in Hallidayan systemic and in generative linguistics. But Crystal's definition is neutral with respect to any school of linguistic analysis. Now, whether the term 'system' used in the title of the book under review is intended to have any of the special meanings or the

general-linguistic connotations, the editors' expectations will probably have been fulfilled to very different extent by the individual authors. The major reason for this is, of course, that the languages included in the book have been described, with respect to intonation, in very different depth. Both BrE and AmE intonation has been the object of a plethora of papers and several monographs, as has, e.g. Sw and Ge, and also Fr and Ru. It is these languages' intonation that can be said to have been described in the book rather more systematically than in the case of the others. The presentation of the main features of Th intonation (in this case interacting with lexical tone) is exemplary in its neatness and clarity.

Functions

There is general agreement as to what function(s) intonation performs in languages. Mostly, they are defined as modal/attitudinal, expressive, emotional and focalizing. A comparison of the languages represented in the book shows very clearly that languages differ greatly in this respect. Similar patterns may have completely different 'meanings' according to language, and conversely, similar meanings may be related to quite different intonations. Moreover, some functions that are performed by intonation in one language may be expressed lexically and/or syntactically in others. There may perhaps be more universality of emotional effects, but we have still to wait for analyses of genuinely emotional speech.

Referencing

The individual authors' references are collected, obviously in order to avoid repetitions. The extent of referencing varies greatly between the individual contributions, from ample and comprehensive for, e.g., the Survey, BrE, Sw and Ru, to almost one author's for Ja. The contributors also vary greatly in their treatment of the historical background of intonation studies. Meyer's seminal studies of Sw are duly registered by E. Gårding, and Klighardt is mentioned as the founder of modern studies of Ge intonation, but it would probably not be amiss to mention Klinghardt's merits as the pioneer of modern descriptions of intonation also in BrE and Fr [Klinghardt and de Four-

mestraux, 1923; Klinghardt and Klemm, 1926]. Also the early contributions of Boyanus [1928, 1955] for Ru should not have been completely ignored.

Non-Universals

The myth of a (local) pitch maximum being either a necessary or a sufficient condition for 'stress' or 'accent', in whatever sense, was finally dispelled more than half a century ago. Another one, about a rise somewhere near the end of a sentence (phrase) signalling interrogation is being severely shaken in the present volume. So is a more recently discovered universal, i.e. that of 'declination'. This book includes examples in most of the 22 languages which show no trace of any declination unless they represent carefully read or 'laboratory' speech. Focalization is denied for Da by Grønnum, and is indicated by essentially non-intonational means in tone-languages here analysed.

The book presents an important contribution to our knowledge of 'speech melody' both in filling many gaps and in providing material which dispels some legends.

Wiktor Jassem, Poznań

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John Hajek
Universals of Sound Change in Nasalization
Blackwell, Oxford 1997
ISBN 0–631–20456–3

This volume is the publication of the author's 'D.Phil. dissertation on questions relating to distinctive nasalization and universals of sound change' (p.v.). Boasting an extensive bibliography and drawing on a wealth of cross-linguistic and experimental phonetic data, this study provides significant insight into the phenomenon of vowel nasalization and reignites the debate around the universals of sound change in language. In fact, Hajek's book represents the first detailed analysis of these issues since the 1970s. This volume appears at a time when there seems to be a return in interest to the phenomenon of vowel nasalization. Other recent monographs on the subjects include Sampson [1999] and Huffman and Krakow [1993].

While focusing specifically on eight Romance dialects of Northern Italy and one Rhaeto-Romantsch variety, the volume nevertheless does not neglect language data from other areas. This extends the monograph's usefulness from the desk of the Romanist to the bookshelf of the general linguist. Indeed, Hajek's discussion is wide-ranging covering issues which relate to linguistic theory, representation and formalism, mode and methods of data collection and evaluation, language sampling, diachronic reconstruction and synchronic analysis. The work is aimed at the experienced linguistic scholar and, although not a prerequisite, some knowledge of Romance linguistics greatly enhances its reading.

The volume is organised into nine chapters, preceded by acknowledgements, a map of Northern Italy with location of sample dialects, contents, list of figures, list of tables, note on transcription and abbreviations and a brief introduction. Notes appear consolidated at the end of the discussion and are followed by bibliography and language, author and Latin word indexes. Hajek's style is direct and, at times, conversational, which renders complex concepts readily accessible.

In the introduction, Hajek sets out the goals of his endeavour: to define 'the universal characteristics, if any, of language in the context of sound change and phonology in general' and to determine 'the phonetic basis assumed to underlie sound change and phonology' (p. 1). He identifies his study as motivated by the same factors which provided impetus for the universalists of the 1970s and notes that new formalisms available to phonologists since the 1970s 'may allow for better generalizations to be made about the development of distinctive nasalization' (p. 2). This section concludes with a summary of the following chapters.

The remainder of the book can be neatly divided in to two sections: chapters 1–3 set out Hajek's model of sound change while chapters 4–8 examine the effects of a range of conditioning factors on the development of distinctive vowel nasalization. Chapter 9 presents in a concise manner results and conclusions of the study and effectively synthesizes the essence of the foregoing discussion. Hajek's argument hinges on one recurring notion: diachronic sound changes and synchronic variation must have phonetic plausibility. This grounding of theory in linguistic reality is perhaps the most refreshing aspect of the study. The author argues convincingly that the 'immense descriptive power of generative formalism' must be constrained in order to determine the 'finite set of phonetically defined phonological features and of phonetically plausible phonological processes … from the much larger set of logically possible but often "unnatural" processes that can be posited with the available tools of formal description' (p. 5). In this vein, Hajek rigorously weighs all claims, both his own and those of others, against a body of cross-linguistic empirical data.

The discussion takes place within a model of lexical phonology and makes use of non-linear autosegmental representations. The author discusses this choice of model at length in chapter 1. Sound change is viewed by the author as listener-oriented and phonetically gradual. The phonological context under scrutiny is limited to tautosyllabic VN sequences in stressed syllables, i.e. 'VNS.

The author makes a series of significant claims regarding vowel nasalization in this study and my brief summary will not do justice to their importance. First, Hajek points out

that the conventional premise that distinctive vowel nasalization, whether surface or underlying, develops typically as a result of nasal deletion is not supported by cross-linguistic data. Providing extensive empirical support both from Romance varieties and further afield, Hajek demonstrates that languages can exhibit contrasts between ṼN and VN.

Second, the author convincingly argues that 'it is appropriate to assume that, historically, N-deletion occurred following phonologization of contextual nasalization' (p. 70). The upshot of this claim is that even in cases where a nasal consonant has been lost with no synchronic trace of nasalization on the remaining vowel, an intermediate stage of nasalization must be posited before the nasal consonant was lost. Subsequently some process of denasalization is invoked. This trajectory is supported by recourse to phonetic plausibility: once contextual nasalization has been phonologized, the nasal consonant loses its salience and is liable to deletion.

The third important claim is that vowels must be phonologically long to be nasalized. Again, Hajek rigorously supports this claim by appealing to a corpus of empirical data. Following Hombert [1987], Hajek proposes a vowel length parameter (VLP) and then refines this for his data set to the Restricted VLP:

$$\text{VLP} \qquad \text{Restricted VLP}$$
$$\text{V:N} \quad \text{VN} \longrightarrow \qquad \text{V:N} \longrightarrow$$

In terms of the array of factors conditioning the development of nasalization, Hajek finds stress and foot structure particularly salient. The author refines Schourop's [1973] Tonic → Atonic parameter and presents the Extended Stress Parameter (ESP):

$$\text{ESP}$$
$$\text{'VN} \quad {}^{+}\text{VN} \quad {}^{-}\text{VN} \longrightarrow$$

where 'VN = stressed vowel, *VN = pretonic vowel, ⁻VN = post-tonic vowel.

For languages with a left-headed foot structure, Hajek proposes the following Foot Parameter:

$$\text{A Foot Parameter}$$
$$\text{'σ} \quad \text{'σσ} \quad \text{'σσσ} \longrightarrow$$
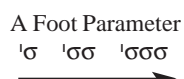
Notably, both parameters are convincingly linked to 'predictable differences in phonetic V length and the effect such differences are thought to have on the perception of contextual V nasalization (p. 110).

As to other conditioning factors, in common with Sampson [1999, chapter 1], Hajek finds no compelling evidence that vowel height, or back versus front quality exert 'a single universally consistent effect on the spread of distinctive nasalization' (p. 205).

A final very useful aspect of the discussion is Hajek's grouping of well-attested diachronic, phonological phenomena in the development from Latin to Romance into two reconstructed stages. This avoids the thorny issue of relative chronology and the debate around the existence or not of a proto-Romance language while capturing the uniformity of development across Romance varieties. As the author says '[w]hilst from the synchronic point of view, the same change has occurred in all dialects in question, there is no way of establishing nor any need to assume that the change occurred in all dialects at precisely the same point in time' (p. 39). The postulated changes for each stage are listed in this table.

Stage 1	Stage 2
(1) Transformation of the Latin vowel system	(1) Very early lenition of intervocalic obstruents /p, t, k, b, d, g, s, f/
(2) Loss of most word-final nasals	(2) Reduction of Latin geminates to simple consonants
(3) Palatalization	(3) Loss of final atonic vowels, except /a/
	(4) Fusion of ŋ to [ŋ]

In this volume Hajek powerfully demonstrates the link between phonetic reality and phonological structure, and provides a template for future research in similar areas. He also goes some way towards identifying some potential universals of sound change in nasalization. The constant and rigorous appeal to cross-linguistic experimental data to support claims is perhaps

the strongest feature of this work. As a model of linguistic research, Hajek's study is highly recommended to serious scholars of Romance linguistics, phonological theory and general linguistics alike.

Matthew Absalom

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