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This book is a welcome addition to the line-up of the Cambridge Textbooks in Linguistics, and is, if I may indulge myself a bit, a gem of a textbook in two senses.* First, it deals with tone and is written by one of the leading scholars of tone; second, it is rare – the first textbook in the English language devoted exclusively to tone. In the quarter century since tonal phenomena motivated autosegmental representation in Leben (1973) and Goldsmith (1976), a lot has happened to generative phonology in general, and to tonal phonology in particular. Yip’s book should therefore be read both as a textbook on new approaches to tone and as a compendium of tonological issues that have occupied students of tone in post-*SPE* generative phonology. In this review, I shall first give a brief synopsis of the book, before proceeding to discuss the tonological issues treated therein.

The book has ten chapters. Chapter 1 introduces the basics of tone, which include the production of tone and the place of tone within a formal theory of grammar. It also has a section that summarises the rest of the book. Chapter 2 is introductory in nature as well, but is more specifically on the phonological issues related to tone, some of which are further elaborated upon in later chapters. These include the geographical locations of tone languages, the formal characteristics of attested tonal contrasts, the relationship between tone and consonants, and tonal genesis. Notational conventions and fieldwork issues are also discussed. These are important, since complex and idiosyncratic phonetic variation may disguise simple and systematic phonological patterning. The next six chapters fall into two thematically linked groups – the central theoretical issues of tone are treated in Chapters 3, 4 and 5, and the characteristics of African, Asian and American tone languages are surveyed in Chapters 6, 7 and 8, respectively. Tone languages spoken in Micronesian and Indonesian islands are mentioned only briefly. This is not an oversight on the part of the author; these tone languages do not figure prominently in post-*SPE* tonological literature. Chapter 9 discusses tone in relation to stress and intonation, and Chapter 10 discusses perception and acquisition of tone. The book’s narrative structure is theory-driven, and each theoretical point is illustrated with relevant data selected from various tone languages. Chapters 4, 6, 7 and 8 are interspersed with well-designed exercises that allow students greater insight into the analysis of tonal phenomena. The answers are provided at the end of each chapter. Most

* I thank Moira Yip for her comments on an earlier version of the review. Of course, all errors of fact and interpretation are my own.
of the exercises do not provide new data for analysis, and some are better read as an extension of the narrative that precedes them. In addition, the book contains nine maps showing the locations of major tone-language families, a glossary of terms and abbreviations, and a list of the OT constraints discussed in the book. Only constraint labels are provided. Although the labels are mnemonic, e.g. MAX-IO for the constraint that demands maximum correspondence between input and output, page references to where the constraints are first defined in the text may prove useful to readers who are not already familiar with Optimality Theory.

Chapter 3 discusses tone features. The focus is not on the features per se, but on their geometric organisation. Two central topics in recent tonological studies concern the number of level tones, such as H or L, and tonal contour, such as rise or fall. On the issue of level, it has been observed that, while languages with more than four level tones are attested, typical tonal inventories contrast no more than four levels of pitch. These can be adequately specified in terms of two features, say [upper] and [raised], as proposed in Yip (1980). Here the features are not treated in the same way as distinctive features are treated in SPE, where [+ upper, + raised] is seen as a feature matrix defining the high level tone. In Yip’s (1980) proposal, these two features do not form a ‘bundle’; instead, they are autosegments linked independently to tone-bearing units. Yip also discusses the work of Hyman, in which the two features, or their equivalents, are arranged into some sort of hierarchical structure. These structures have the theoretical potential to specify more than four level tones. The differences between Yip and Hyman range from the terminological ([+ upper] vs. H) to the conceptual (the notion of register). Concerning tonal contour, Yip’s account is concentrated on post-SPE debates on the geometry of contour, as represented in the work of Bao, Clements, Duanmu, Hyman, Snider and Yip. Empirical evidence that bears on the issue has to do with tone-sandhi facts, especially tonological phenomena that involve contour tones. The data come mostly from Chinese dialects. This is not surprising, since contour tones are common in Chinese and are freely distributed in long utterances, unlike their counterparts in African tone languages. Unfortunately, available evidence is less than conclusive on the issue, so the debate continues.

A thorough reading of Chapter 4 is necessary both for the basic tonology it introduces and for the Optimality Theory which is used as the analytic framework. Here, we learn the ‘pure’, and by now classic, phenomena of tone that provide the crucial empirical evidence for autosegmental representation, namely mobility, stability, one-to-many/many-to-one tone-to-syllable mappings and toneless syllables. These are first discussed in autosegmental terms, and are subsequently analysed in the framework of Optimality Theory. The OT analysis of each phenomenon is accompanied by well-designed exercises which help consolidate and expand the readers’ understanding. Missing from the discussion is a separate section on the treatment of floating tone, which I would like to see included here, not only because it plays such an important role in our understanding of downstep/downdrift, discussed extensively in later chapters, but also because it helps illustrate the need for the two faithfulness constraints that deal with tone deletion: MAX(T) (‘no deletion of tones’) and *ASSOC (‘no new association lines’). Neither deleted nor floating tones surface, but only the latter obey both constraints. Furthermore, Yip’s analysis of tonal stability allows us to see ‘floatingness’ as the (near) complement of stability. By ranking the
markedness constraint $F \text{LOAT}$ (‘a tone must be associated with a TBU’) above $\text{ASSOC}$, we force tonal stability; by ranking $\text{ASSOC}$ above $\text{FLOAT}$, a floating tone remains unassociated with a tone-bearing unit. The structures are shown in (1); see also tableau (52) on page 86.

(1) a. $\text{FLOAT} \gg \text{ASSOC}$

\[
\begin{array}{c|c|c}
\sigma & \sigma & \sigma \\
 H & L & H \\
\end{array}
\]

b. $\text{ASSOC} \gg \text{FLOAT}$

\[
\begin{array}{c|c|c|c}
\sigma & \sigma & \sigma & \sigma \\
 H & L & H \\
\end{array}
\]

Max(T) ensures that the unassociated tone is not removed from the phonological representation. In languages with downstep/downdrift, the second H in both structures is realised lower than the first H, caused by the intervening L. (1a) is the structure for downdrift; (1b) for downstep (p. 148).

From the ‘pure’ phonology of tone Yip moves in Chapter 5 to the interaction between tone and other components of the grammar, i.e. morphology and syntax. Besides tonal morphemes and construction-specific tonologies, two themes run throughout the chapter: the formation of the tonal domain and the role of domain-internal structure, i.e. cyclicity. The basic tonological processes discussed in Chapter 4 take place within a morphologically or syntactically circumscribed tonal domain, and may be dependent upon domain-internal structure (cyclic) or independent of it (non-cyclic). Word-level tonology is dealt with first, followed by sentence-level tonology, with the latter focusing on approaches which make use of constituent edge. The topics are illustrated with ample data from Chinese and African languages, and discussed in the more familiar derivational language, drawing on the work of Selkirk and Chen, among others, and in Optimality Theory. Technically the edge-based derivational account and the OT alignment account are quite compatible. The edge-marking parameter of Selkirk and Chen is functionally equivalent to the alignment constraints in Optimality Theory; both align an edge of a tonal domain with an edge of a morphological or syntactic phrase.

Although the same or similar tonological processes are attested in geographically unrelated tone languages, this is not to say that all tone languages are alike. Some tonal phenomena may be common in African tone languages, but rare in Sino-Tibetan or native American languages, and vice versa. In the next three chapters, Yip introduces the reader to the common characteristics of tone languages in Africa (Chapter 6), Asia and the Pacific islands (Chapter 7) and the Americas (Chapter 8). These are not to be read as typological. From the perspective of theoretical tonology, geographically defined typology does not help us understand tonological processes.

Compared with Asian or American languages, African languages tend to have relatively small tonal inventories, typically two (H and L), plus contour tones which are demonstrably sequences of the basic H and L. Asian languages, by contrast, have relatively large tonal inventories: Beijing Mandarin has four, Cantonese ten (surface) tones and Thai five, plus two ‘checked’ tones. Most Asian languages have contour tones which resist being reduced to sequences of H and L. Yip lists seven common properties of tone in African languages, including mobility and downstep/downdrift. Tonal mobility is illustrated with data from Digo, a Bantu language, where a H tone surfaces on the last two syllables of a tonal domain regardless of its lexical origin. The OT analysis
typically makes use of binary footing and alignment constraints. The analysis of downstep/downdrift is not as straightforward, given the complexity of the phenomenon. Yip outlines two basic approaches: the phonological approach in terms of metrical or featural geometry, and the phonetic approach, in which downstepping in structures such as (1) is seen as a matter of phonetic interpretation.

Mobility and downstep/downdrift are not common in Asian tone languages. Common properties include contextual tone change (the third tone sandhi in Beijing Mandarin), tonal loss or reduction in non-initial or non-final syllables (Wu or Min) and chainshift (A → B → C → A, e.g. the Min Circle). Yip’s discussion focuses on the better-studied Chinese dialects, which include the Mandarin, Wu and Min families, and reveals the enormous diversity of tone among them. Edge-driven tonology is characteristic of Wu and Min dialects, and chainshift of Southern Min. Neither is attested in Mandarin. Besides Chinese, Chapter 7 also includes one section each on Tibeto-Burman (e.g. Tibetan and Burmese), Austro-Tai (e.g. Thai) and Mon-Khmer (e.g. Vietnamese).

Chapter 8 surveys tone properties of languages in the Americas. Compared with African and Asian languages, the tonal inventories in the languages of this region are large, not only in the number of level tones (4 or 5), but also in the number of surface contour tones (up to thirteen; see p. 214). This presents problems for the theories of tone discussed in Chapters 2 and 3. Large inventories aside, the tonological processes are familiar to students of African and Asian tone languages. Here we see instances of stability, spreading, floating tone, downstep and chainshift, although not all in the same language. In some American languages, tone interacts with stress in two ways. First, tone is dependent on stress, so that tonal contrasts are fully expressed on stressed syllables but reduced on less stressed syllables. Second, stress is assigned by reference to lexically specified tones. These sorts of tone–stress interactions take place in African or Asian languages as well, and are discussed in earlier chapters. Here they receive more systematic attention.

Chapter 9 covers two large topics: tone, accent and stress on the one hand, and tone and intonation on the other. Yip draws a sharp distinction between stress and tone. There are two defining criteria: rhythmic structure and tone as part of the lexical representation of words. Chinese is a typical tone language, where tone must be lexically specified, and English is a typical stress language, where rhythmic structure organises an utterance. Can languages have both tone and stress? This is in fact a controversial issue. Phonologists’ instinct is to reduce one to the other, instead of postulating both as part of the phonology. For Yip, the distinction between tonal and accentual is a matter of degree: an ‘accentual’ language has one or two lexical tones, whereas a tone language has more. Other properties may also serve to differentiate between the two types. Yip treats intonation as phrase-level tone, and discusses only theories of intonation which make use of the same tonal melodies (H, L and sequences thereof). The work of Pierrehumbert and Beckman on intonation figures prominently in the chapter. Needless to say, intonation and lexical tone interact. To avoid potential conflict between the two, tone languages resort to strategies that are not commonly used in non-tonal languages. One such strategy is the pervasive use of particles. This preserves the lexical tonal contrasts within an utterance, and conveys the nuanced meanings of intonational melodies at the same time. Of
course, particles are not a diagnostic feature; they are nevertheless more common-ly found in tone languages. After discussing the issues related to tone, stress and intonation, Yip presents an OT account of the lexical and phrasal tonology of Roermond Dutch, an accentual language with a Germanic stress system. This is followed by a discussion of speech rate and stylistics, and their effect on tone.

The last chapter of the book deals with the perception and acquisition of tone. Unlike the previous chapters, this chapter reads like a summary of the relevant literature on pitch perception, tone identification and tone acquisition. While there is an abundance of studies on tonal phonology, the literature on tone identification and acquisition is exceedingly small. On these topics, Yip’s conclusion is that there are more questions than answers. This is rather unfortunate, since the size of tone inventory and the nature of tonal contrast – central issues in tonological study – are no doubt limited by our perceptual capability.

In the Preface, Yip sets two goals for the book: as an introductory text and as a reference. She succeeds in both goals. As a reference, it contains an exhaustive list of topics that are well studied in the literature, as well as topics about which we know very little. As a text, the book is accessible to students who have had some exposure to generative phonology and to Optimality Theory. It should be an integral part of phonological training.

REFERENCES