[Review]

Phonological Domains: Universals and Deviations


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1. Introduction

This book consists of a general introduction “Prosodic Phonology: An appraisal” by Grijzenhout and Kabak and ten original articles that focus on various aspects of Prosodic Phonology. About 30 years have passed since models of Prosodic Phonology were first proposed by Selkirk (1984) and Nespor and Vogel (1986). This book presents a collection of original papers that focus on aspects of this theory that are currently topics of interest.

A central characteristic of Prosodic Phonology is the Prosodic Hierarchy, including units such as Mora, Syllable, Foot, Phonological Word (or Prosodic Word), Clitic Group, Phonological Phrase, Intonational Phrase, and Phonological Utterance, which are defined on the basis of the morphosyntactic structure of sentences. It is commonly assumed that these Prosodic Constituents (or Prosodic Categories) are not always isomorphic to morphosyntactic constituents. Prosodic Phonology supposes that the domains of phonological rules are expressed by Prosodic Constituents instead of morphosyntactic constituents. Prosodic Phonology assumes that the structure of the Prosodic Hierarchy and its constituents are universal, although the precise shape of the constituents is based on language-specific well-formedness conditions. The theory of Prosodic Phonology offers explicit ways of exploring many aspects of the languages of the world. This program has not only substantiated the core assumptions of the theory itself, but has

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also developed our understanding of the ways in which this component of phonology interacts with other components, such as syntax (Selkirk (1984), Kaisse (1985), Truckenbrodt (2007) and Vogel and Kenesei (1987)) and semantics (Vogel and Kenesei (1990)). Phonology must, of course, be able to interface with the fundamental principles of the syntactic component and other components as well (such as semantics and pragmatics), regardless of the precise format of these components.

It is also clear that there are still controversies on the nature of the Prosodic Constituents in the Prosodic Hierarchy, such as, specifically, the Clitic Group and the Phonological Utterance. Selkirk (1984) points out that some researchers have excluded the Phonological Utterance from the Prosodic Hierarchy because they believe there is little motivation for it. Furthermore, the Clitic Group, suggested by Nespor and Vogel (1986) and Hayes (1989), has already come under fire (e.g. Inkelas (1990), Zec (1993), Booij (1995), Peperkamp (1996)), and today almost never figures in the inventory of Prosodic Categories. For example, Selkirk and Tateishi (1988, 1991) point out the a possibility that the Phonological Phrase in Japanese can be divided into “Major Phrase” and “Minor Phrase” in order to exclude the Clitic Group from the Prosodic Hierarchy. A principle like the Strict Layer Hypothesis (Nespor and Vogel (1986)), which states that any Prosodic Constituent \( n \) is immediately dominated by another Prosodic Constituent \( n+1 \), has also become controversial. Ito and Mester (1992) first noted that this particular analyse requires a deviation from this central principle of Prosodic Phonology. Vogel (1994) suggests that the Strict Layer Hypothesis might be violable, on the basis of Italian data. Because Phonological Words appear to be recursive in Italian, Vogel suggests that the Strict Layer Hypothesis might not be universal. Selkirk (1996) also suggests that there are cases where a syllable constituent is immediately dominated by a Phonological Word, also in violation of the Strict Layer Hypothesis. Furthermore, Selkirk (1996) proposes that the Strict Layer Hypothesis is a cluster of constraints and, like other constraints in Optimality Theory (Prince and Smolensky (2004)), is violable. Zec (1994) proposes excluding the Clitic Group from the Prosodic Hierarchy, and assumes that the Clitic Group can be identified with the Phonological Word in the postlexical phonology, rather than assume that the Phonological Word and the Clitic Group are separate prosodic domains. Zec (1994) also points out that the Clitic Group differs from other (complex) prosodic units in that it is a combination of prosodic and non-prosodic elements, that is, of a phonological word and a clitic, whereas all other complex units are combinations of prosodic units at the
immediately lower level of the Prosodic Hierarchy. Zec (1994) therefore proposes eliminating the Clitic Group from the Prosodic Hierarchy, in conformity with the Strict Layer Hypothesis. These are some of the issues that, in detailed investigations on individual languages of the world within the past twenty years, have uncovered many new aspects of Prosodic Phonology. The book under review builds on and adds to these themes.

Below, I will focus on the issues and controversies around the theory of Prosodic Phonology, following the order of the chapters in the two parts of this book.


The basis of Prosodic Phonology is the idea that prosodic constituents are contained within a hierarchical structure, that is, the Prosodic Hierarchy. Prosodic Phonology has been tested in many ways through precise investigations into typologically diverse languages. In order to solve particular problems and treat language-specific phenomena, researchers have used prosodic domains in various ways.

In this book there are various attempts to eliminate specific phonological domains from the Prosodic Hierarchy. As pointed out above, the Clitic Group is perhaps the most notorious of all prosodic domains, having raised a number of controversies in the field of Prosodic Phonology. Many researchers have argued against this constituent on various empirical and theoretical grounds. In the first of the two articles in Part 1, Vogel discusses a number of these attacks on the Clitic Group, and reviews alternative analyses. She focuses on psycholinguistic evidence for the domain, based on two psychological experiments with Dutch speakers. She aims to show that the Clitic Group is necessary on the basis of cross-linguistic evidence and the theoretical impossibility of recursive Prosodic Constituents. She also concludes that some aspects of the Prosodic Hierarchy clustering around the Clitic Group and the Phonological Word are indeed problematic. It is demonstrated that these problems with the Clitic Group are not isolated, but are related to the arrangement of Prosodic Constituents resulting within the Strict Layer Hypothesis. One solution for these problems has been to eliminate the Clitic Group from the Prosodic Hierarchy and to accept recursivity at the level of the Phonological Word, but this approach has a number of undesirable results. After discussing potential solutions, Vogel shows that it is necessary to weaken the Strict Layer Hypothesis which allows the Clitic Group to be retained as a part of the Prosodic Hierarchy. Finally she
shows that, if we accept the Clitic Group, the interpretation of the psycholinguistic experiments with Dutch speakers becomes quite simple, providing psycholinguistic motivation for the proposals suggested by her paper. Incidentally, Vogel and Raimy (2002) also suggest that the Clitic Group is needed to describe the difference between compound stress in English (which takes the Clitic Group as its domain), and phrasal stress (which is based on the Phonological Phrase domain). They suggest that the Clitic Group might be renamed “Composite Group”, which allows us to maintain the relatively flat structure of phonology compared to morpho-syntax.

Next, Bickel, Hildebrandt and Schiering offer a typological investigation of what kinds of possible domains of the Prosodic Hierarchy can be empirically supported within a sample of languages. They investigate the principles that explain the arrangement of the attested domains, instead of assuming a finite and universally fixed set of phonological domains in the Prosodic Hierarchy. They use the statistical tool of Multi-Dimensional Scaling to analyze their data. The main result of this analysis is that stress-related domains tend to be larger than domains implicated in other phonological patterns. They show that the influence of stress is independent of range, and find provisional statistical support for the hypothesis that stress-defined domains tend to be significantly larger than other domains (p. 72), although this finding remains to be tested for other samples of languages. They conclude that the deviations and universals of prosodic structure in future investigations will have to be explained as part of typological variation.


This part contains eight papers which specifically deal with the nature of syntax-phonology mapping in a variety of languages, and takes a fresh look at concepts and analytical tools which have, for a long time, been taken for granted by some linguists.

Cardinaletti and Repetti investigate two cases in which the Strict Layer Hypothesis appears to be violated, and present a new analysis of the facts. They present data from Northern Italian dialects where verb plus enclitic strings exhibit special phonological behavior, which indicates that these units should not be identified with Phonological Words (or Prosodic Words), but rather as sequences of verbs and free clitics, which together form a Phonological Phrases. They suggest a model of the Prosodic Hierarchy in which there is an extra “Phrasal Syllable Level” as a new Prosodic
Constituent below the Phonological Phrase. This proposal is cast in the framework of Optimality Theory, and indicates how constraints and ranking provide an explanation for the phenomena in question.

Kabak and Revithiadou propose a new approach with respect to recursivity in phonology. Their aim is to examine the nature of recursive Phonological Words and how these are produced at the morphosyntax-phonology interface. According to their view, recursive structures in the phonological component are based on recursive structures in the morphosyntax. In other words, recursion is not a specific property of phonology but results from the reflection of recursive structures at the morphosyntactic level. In accordance with the interface character, their approach restricts recursivity to the Phonological Word as well as to higher prosodic levels such as the Phonological Phrase, since these are the main Prosodic Constituents which are required by the morphosyntax-phonology interface. They focus on arguments that support recursive Phonological Words in Selkirk (1996) and Booij (1995) and observe that these arguments have been applied inconsistently. Their proposal is empirically supported by intricate evidence from Greek and Turkish. They also pay attention to some functional problems with the constraint NonRECURSIVITY, and conclude that there is no need for this constraint, since the interaction of other well-established constraints can adequately account for recursive structures in the phonological component.

Ito and Mester’s article focuses on Prosodic Adjunction in the Prosodic Hierarchy. They propose a novel approach to constraints regarding layering in prosodic structure, pointing out the basic observation that phonological form merely mirrors morphological form, which removes a great deal of the motivation for recursive prosodic tree structure (cf. also the previous paper). They assign a crucial role for adjunction in a representational formulation of various types of subminimal elements, such as function words, clitics, prepositions and others, with respect to the way in which functional elements are parsed into prosodic constituents. Further, they survey the evidence presented in previous investigations of English and German in favor of Phonological Phrase-attachment of functional elements, and argue that these accounts of the facts are incomplete. They then suggest an alternative approach using prosodic projection in which adjunction plays a prominent role and propose that function words are not as weak as formerly believed; rather, these items establish dependent constituents within extended Prosodic Word (or Phonological Word) structures.

Dobashi deals with several theoretical aspects of the syntax-phonology in-
terface within the framework of the Minimalist Program, adopting the Multiple Spell-Out Hypothesis proposed by Chomsky (2001). He indicates that it is natural to assume that a unit mapped to the phonological component by Spell-Out constitutes a Phonological Phrase. Furthermore, he points out two fundamental problems (i.e. the Mismatch Problem and the Assembly Problem) concerning the Multiple Spell-Out Hypothesis, in particular the syntax-phonology mapping. These problems occur in connection with the mapping of the phase-matter onto Prosodic Constituents. Taking Spell-Out to be a two-step operation (linearization plus transfer), he proposes that the Assembly Problem is solved by allowing the transfer of the initial element of the linearized string to the phonological component and this leads to a solution of the Mismatch Problem as well. As for the empirical part of this contribution, he examines phrasing in Ewe and Chichewa. The difference between these two languages is referred to in the syntactic component and concerns the position of the object. It is clear that Phonological Phrasing is mainly based on syntactic analysis. The hypothesis in this article is a null hypothesis in the sense that it needs no particular mapping algorithm to produce a Phonological Phrase by using syntactic information such as maximal projections. In this way, Dobashi shows that a Phonological Phrase is merely a string mapped by Spell-Out.

Lleó and Arias point out that in language learning, children differentiate between prosodic boundaries that limit word edges and boundaries that create the edges of intonation contours. In relation to primary word-stress, they discover that, in two typologically different languages, German and Spanish, children produce initial closed syllables within a trochaic foot, even if the final syllable shows the boundary of an Intonational Phrase. In addition, Spanish children frequently allot more weight to the primary stressed syllable by attaching an extra coda consonant, although adult Spanish is based on a Quantity Insensitive stress system. They investigate this fact as an effect of Stress-to-Weight, that is, “if stressed, then heavy.” Since children are apt to prolong the final vowel within an Intonational Phrase, they presume that, from an early age on, the right-hand boundaries of larger prosodic domains are marked by vocalic length. Therefore, they indirectly indicate that the acquisition of phonology entails a phonological component which discriminates between Prosodic Words (or Phonological Words), whose edges can be marked by adding segmental substance, and higher prosodic constituents, whose edges are signaled by means of longer duration.

Göksel, Kelepir and Üntak-Tarhan examine Turkish intonation with a focus on constructions that give rise to a response, and show that utterance-
level phonological divisions do not rely on syntactic structure and boundaries, but on semantic and pragmatic functions. Their analysis suggests that there may be a detailed correspondence between the components of the intonational contour and the semantic and pragmatic components of a clause formed by syntax. Their findings also show that there are models that build upon the direct relation between syntactic phrasal projections, as discussed in Chomsky (2001), and phonological forms. However, their data show that the phonological phrases are not necessarily isomorphic with syntactic phrases. To what extent syntax plays a role in the articulation of such correspondences is still uncertain. They suggest that further research on other clause types in other languages may shed more light on this issue.

Árnason presents an exhaustive description and analysis of prosodic patterns in Modern Icelandic, reaching the conclusion that the syntax-phonology relation is not direct, although morphosyntactic phrases and words correspond to phonological constituents to a large extent. He points out that prosodic reorganization is based on style and pragmatic function, parallel to the claims of the previous paper. The characteristics of phonological constituency proposed in this article are of two kinds: one is cohesive (sandhi); the other is demarcative (boundary signals). Accordingly, sandhi rules can apply between syllables within feet, between feet within words, and between words within phrases. He also finds evidence for constituents like syllable, foot and word, and a requirement for a higher phrase level. However, he does not find any simple phonological evidence for any intermediate prosodic constituent (Clitic Group) between word and phrase. The sandhi facts are subject to strength relations and presupposition connections. The demarcative signals are related to peripheral positions as part of the utterance’s rhythm. In this case, it is shown that there is no need for special boundary marks or brackets that show the edge of a phonological constituent.

Van der Hulst focuses on a general assumption concerning the relationship between phonology and the other components of grammar. He shows that we need two types of phonology, one concerned with phonotactic structure (or phonology proper) and another with utterance structure (or phonetics). The latter component is different from phonetic implementation, since the former handles categorical and obligatory phonological matters, and the latter is employed for phonological matters that rely on speech rate and speech style. He points out that primary word stress should be explained at the phonotactic level, involving phonological domains such as the Prosodic Word (or Phonological Word) or Phonological Phrase, whereas rhythmic structure in prosodic structure should be accounted for at the utterance level,
on the basis of the metrical grid.

In sum, this book includes various approaches and positions with respect to phonological domains. The articles in this volume reconsider various assumptions that have been taken for granted by some researchers who focus on prosody, and suggest new observations regarding the nature of prosodic organization and the universals and deviations in terms of mapping between morphosyntax and phonology. This volume not only develops and formulates certain constituent-structure concepts such as adjunction, but also investigates notions such as recursion. Furthermore, new prosodic constituents such as the “Phrasal Syllable” are proposed in this book. It is clear that this volume presents a number of solutions for a number of controversies that have surrounded the proposed Prosodic Hierarchy in Prosodic Phonology and identifies a number of important areas for future investigation. All contributions in this book will be welcomed by phonologists in general as they bring about a new stage in our understanding of various lines of research in Prosodic Phonology.

REFERENCES


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