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REVIEW

Theoretical overview of Phonology in Brazil: a tribute to Leda Bisol

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ABSTRACT

The roundtable *Phonology*, moderated by José Magalhães (UFU) and organized in honor of Professor Leda Bisol, presents an overview of studies on Phonology from different theoretical perspectives. Carmen Matzenauer (UFPEL) introduces Classical Generative Phonology, based on concepts such as levels of representation, rules and features, and its subsequent developments. Luciani Tenani (UNESP – São José do Rio Preto) presents the premises of Prosodic Phonology – a theory that organizes the speech continuum into hierarchical prosodic constituents. Christina Abreu Gomes (UFRJ) deals with Usage-based Phonology and the Exemplar Model, which predicts emerging abstractions from the use and linguistic experience of speakers.

RESUMO

A mesa redonda *Fonologia*, conduzida por José Magalhães (UFU) e organizada em homenagem à professora Leda Bisol, apresenta um panorama dos estudos em Fonologia a partir de diferentes perspectivas teóricas. Carmen Matzenauer (UFPEL) aborda a Fonologia Gerativa Clássica, pautada nos conceitos de níveis de representação, regras e traços, e nos desdobramentos do modelo teórico. Luciani Tenani (UNESP – São José do Rio Preto) introduz os pressupostos da Fonologia Prosódica – teoria que organiza o contínuo da fala em constituintes prosódicos hierarquizados. Christina Abreu Gomes (UFRJ) trata da Fonologia baseada no Uso e no Modelo de

Exemplares, que prevê abstrações emergentes do uso e da experiência linguística dos falantes.

KEYWORDS
Classical Generative Phonology. Prosodic Phonology. Exemplar Model.

PALAVRAS-CHAVE
Fonologia Gerativa Clássica. Fonologia Prosódica. Modelo de Exemplares.

As part of the online event *Abralin ao Vivo* – Online Linguists, this work reviews the roundtable *Phonology* moderated by professor José Magalhães (UFU) taking place on July 29, 2020. In honor of professor Leda Bisol (UFRGS), the roundtable was composed by professors Carmen Matzenauer (UFPEL), Luciani Tenani (UNESP – São José do Rio Preto) and Christina Abreu Gomes (UFRJ) who addressed different perspectives on phonological studies.

Leda Bisol stands out as one of the main precursors in the field of Phonology in Brazil. The moderator started off by paying tribute to the outstanding work professor Bisol carried out on Brazilian Portuguese phonology. In addition to having supervised studies by great names in current phonology research, Bisol investigated themes under different theoretical frameworks[1]. This fact attests her versatility as a researcher. Among her contributions, it is important to highlight her fundamental role in launching the VARSUL (Urban Language Variation in the South of the Country) project[2]. Moreover, Leda is a 1A/CNPq researcher and recently received the title of Professor Emeritus by the Federal University of Rio Grande do Sul (UFRGS).

The moderator opens the table presenting a history of studies in Phonology, an area that was established as a discipline concomitantly with the inauguration of linguistics as a science. Magalhães presents an overview of phonological studies: he begins in Structuralism, but also briefly presents numerous generative models with particular attention to Classical Phonology (CHOMSKY; HALLE, 1968), Lexical Phonology (KIPARSKY; 1982), Metrical Phonology (LIBERMAN; PRINCE, 1977), Prosodic Phonology (NESPOR; VOGEL, 1986), Optimality Theory (PRINCE, SMOLENSKY, 1993) and, finally, introduces the Usage-based Phonology framework (BYBEE, 2001). The topics covered by each professor were presented chronologically.

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1 Among the main themes studied by Leda Bisol, it is possible to mention vowels, syllables, stress, diphthongs, nasality, prosodic constituency and phonological variation. These themes are inserted in different theoretical models, namely, structuralism, classical generative theory, non-linear phonologies – Lexical Phonology, Metrical Theory, Optimality Theory – and also Used-based Model for Phonology.

2 The VARSUL project is a database constituted by samples of speech from inhabitants of the Southern Region of Brazil. More information on the project can be found at http://www.varsul.org.br/. Access on Aug 4th, 2020.

The debate begins with the presentation of Carmen Matzenauer (UFPEL) on Classical Generative Phonology and the subsequent generative models. In her speech, Carmen points out generative phonology as an important milestone for the development of studies on the phonological component, emphasizing two aspects: i) fundamental concepts on levels of representation, rules and features, and ii) subsequent developments from Classical Generative Phonology with a focus on Autosegmental Phonology.

Generative phonology aims to build a phonological grammar that includes an underlying representation, a system of ordered phonological rules and a surface representation. In generative models, phonological rules are mental operations that convert phonological representations into phonetic ones through processes such as deletion, insertion, junction or alteration of segments. They play a crucial role in the model and are considered the formal expression of phonological knowledge.

The rules mediate two levels of representation: an underlying level and a superficial one. As evidence for these levels of psychological reality, Carmen mentions the work of Hyman (1975), an author who presents arguments to justify the existence of these two levels, from data of i) linguistic intuition; ii) foreign accent; iii) speech lapses; iv) language acquisition.

The notion of feature, another fundamental concept in generative phonology, is also discussed. It is described as both a constituent unit of the segment and a minimal unit of analysis. The features are present both at the phonological level, with classificatory and distinctive function, and at the phonetic level, as continuous physical scales. As they are able to present alternations of languages, the features show that rules do not apply to a random set of segments, but to a natural class. In addition, they are universally available and are part of Universal Grammar.

However, despite the high explanatory power of the theory, Carmen identifies some gaps in the model, such as, for example, the lack of hierarchy among the features of a segment. Subsequently, the emergence of non-linear phonology is emphasized, with examples of successive theoretical models within the generative perspective. The author presents an analysis based on the Autosegmental Phonology. In this model, features, arranged hierarchically, are organized in tiers linked to each other by association lines. The new formalization in tree structure imposed restrictions on the application of rules and changed its formalization, without questioning the existence of two levels of representation.

Finally, Matzenauer points out that what is coded as part of the grammar is what the experience shows as phonologically relevant. This would then be the speaker's phonological knowledge.

Luciani Tenani (UNESP – São José do Rio Preto) is the second speaker. She addresses one of the generative models mentioned earlier: Prosodic Phonology. Tenani states that Prosodic Phonology studies phenomena on the interface with different grammar components. The model's premise is that the grammar of sounds, which is formed by hierarchical constituents, is governed by universal principles, not always in an isomorphic relationship with the morphosyntactic constituents. Tenani exemplifies with the sentences *Vi uma mesa redonda/Vi uma mesa-redonda*, which present the same number of prosodic units, despite different morphological structures of the lexical items (*mesa redonda = phrase*, *mesa-redonda = compound*).

Admitting a mapping of constituents based on relations (NESPOR; VOGEL, 1986), Tenani states that the evidence for the prosodic organization can be segmental, rhythmic or intonational. The object chosen for analysis is the phonological phrase (ϕ).

As segmental evidence, Tenani analyzes cases of vowel sandhi – a phenomenon which helps solving the clash between syllable peaks and was widely investigated in BP by Leda Bisol (BISOL, 1992, among others). The cases of sandhi include degemination (*alun[a]mericana – ´american student´*), elision (*alun[o]landesa – ´dutch student´*) or diphthongization (*alu[wa]mericano – ´american student´*). For occurrence or blocking the process, both stress on the second vowel and the prosodic configuration are at stake. After investigating the phenomenon exhaustively, Tenani concludes that the rule is blocked if V2 carries the prominence of a phonological phrase, as in *aluna age* ('*the student acts*').

The rhythmic evidence mentioned is based on stress clash, which can be solved with the displacement of one of the units. This displacement happens when the first stress is at the level of the word and the second one at the level of the phrase (Jòrnal Hóje, in reference to the name of the Brazilian newscast). On the other hand, it is blocked when both are in the domain of the phrase (jornál hóje, in reference to any newspaper and an adverb of time), since it would change the meaning of the sentence.

As for intonational evidence, Tenani states that there is a complex relationship between tonal events and the preservation of information in the prosodic structure. Tenani shows that the greater the distance between stressed syllables, the more complex the tones; if the syllables are close, there is greater variation in tonal configurations. These results reflect the complexity of the proximity between phrasal stresses. The differences between the tones block certain sequences from being perceived as disturbing the rhythm.

At the end of her presentation, Tenani mentions that Prosodic Phonology provides a prosodic organization based on syntax, without being confused with it. The prosodic organization of utterances can be observed in speech, based on evidence such as the one previously presented by Tenani, but also based on written evidence, from unconventional uses.

The third speaker, Christina Abreu Gomes (UFRJ), presents approaches in an opposite direction: Usage-based phonology and Exemplar Model. As general principles of the proposal, Gomes highlights that i) linguistic knowledge is the result of the interaction between innate cognitive aspects and experience with the language; ii) language use impacts representations; iii) generalizations emerge from forms; iv) there is no division between lexicon and grammar. This framework considers human language as a complex adaptive system.

The nature of representations covers detailed phonetic information of the user experience in different social, interactional and discursive environments. The representations are dynamic and are updated according to language experience. Lexical items are organized in networks of relationships based on sound and/or in meaning similarities and are organized around a dominant representation, more frequent and strongly related to the speaker's experience.

These representations would be organized according to similarity, frequency of use and social indexation. As evidence, Gomes refers to syncope in very frequent proparoxytones in Portuguese

(*xí.c[a].ra* > *xi.cra* – *´cup`*), cases in which the speakers generally identify only two syllables instead of three (CONNINE *et al*., 2005).

Abstractions emerge from the representations and are gradually constructed from the parametric phonetic space and the representations of words in the lexicon – there is, therefore, no boundaries between phonetics and phonology. In other words, word processing involves mapping the acoustic signal to a target category that corresponds to the abstract representation and coding the item together with the update of the set of copies.

Frequency effects capture the influence of use and cognitive aspects. The frequency of occurrence results in the robustness of a stored form; more frequent items are more prone to phonetic changes, and less likely to analogical changes. The type frequency shows the management of abstractions. More frequent categories, such as syllabic patterns or specific morphemes, can be assigned to new items or loans.

This roundtable should be appreciated by both novice and expert researchers in Phonology. Despite the didactic tone of the speech of the three professors, highlighted by many of those who attended the live conference online, the professors not only provided an overview of the field, but also dealt with the different theories in depth.

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