

between representations (what is stored, and how it is stored, in the lexicon) and processes (how the lexicon is accessed).

Part V describes tools, resources, and methodologies for empirical research in laboratory phonology, outlining some of the practicalities and theoretical considerations of applying experimental techniques and data analysis methods. The section examines how to obtain, create, and use corpora, databases, and stimuli, as well as specific methods for collecting and analyzing acoustic, articulatory, behavioral, and neurocognitive data.

From my perspective, there is one technical aspect of the internal organization of the handbook that invites comment – while all chapters contain contributions by multiple authors, in some chapters this is manifested as a single cohesive, multi-authored paper, but others are composed of multiple singly-authored contributions, each with a distinct theme and perspective. This organization creates very many small selections, which would generally lend themselves well to choosing specific chapters for review, when one only wants to look at one or a few selections relevant to one's current topic of inquiry. However, all of the references are compiled into a single list at the end of the volume, rather than being given at the end of each chapter. This arrangement makes sense, in that many works are cited in multiple chapters, but makes it more difficult to include the reference list of individual chapters in scans or photocopies for classroom use, because one must include the bibliography of the entire handbook. Nevertheless, given the breadth of topics covered, the editors have succeeded in arranging the chapters into a surprisingly cohesive narrative, which facilitates chapter-by-chapter reading. The authors they have selected are recognized in their fields and have made valuable contributions to laboratory phonology. I would recommend this handbook not only for those researchers who are thinking about incorporating laboratory phonology methods into their own research, but I believe that even seasoned laboratory phonologists can learn much from reading about the state of the art of the discipline.

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ANTÓNIO EMILIANO, *Fonética do português europeu: descrição e transcrição*. Lisboa: Guimarães, 2009. Pp. xviii+388. ISBN: 978-972-665-614-2 (pbk).

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António Emiliano is a well-known linguist in Portugal. A professor of linguistics at the Universidade Nova de Lisboa, his career has developed mainly within the field of historical linguistics. This book on the production, classification and transcription of the sounds of

European Portuguese (EP) shows his deep knowledge of general and Portuguese phonetics and phonology, which he also teaches at his university.

In the foreword of his book, Emiliano writes that this is NOT a handbook of phonetics (p. xiii); it is mainly intended to be a 'normative' guide to the pronunciation of standard EP (e.g. pp. xiiiiff.). In this review, I will try to make it clear that, in addition to Emiliano's 'normative' purposes, *Fonética do português europeu: descrição e transcrição* may also be included in the set of good, authoritative handbooks of Portuguese descriptive phonetics.

The book is divided into two main chapters, preceded by two prefaces, the first one by Stephen Parkinson (University of Oxford) (pp. ix–x), the second one (an 'anteloquium') by the author himself (pp. xiii–xviii). The first main chapter of the book (pp. 1–84) is devoted to the production and classification of EP sounds and includes a preliminary, thorough discussion of fundamental concepts of articulatory phonetics, segmental phonology and phonetic transcription. The second main chapter (pp. 85–290) gives us a comprehensive illustration of the sounds of this language: for each sound, an articulatory classification is given, the appropriate phonetic symbols (both in IPA and SAMPA/X-SAMPA) are indicated, and a substantial list of examples (more than 1900 words), presenting the sound in different segmental and prosodic contexts, is given in phonetic transcription. This section ends with a set of useful comments and remarks (pp. 247–290) about the main specific topics involved in the transcriptions that were given before, ranging from the choice of particular phonetic symbols to the description of variation phenomena and the level of detail of the transcriptions which are offered. In this chapter, sounds are presented in this order:

#### CONSONANTS

Obstruents: Plosives, Fricatives  
 Sonorants: Nasals, Rhotics, Laterals  
 Approximants (Glides)

#### VOWELS

Syllabic vowels: Non-nasal, stressed;  
 Non-nasal, unstressed, non-reduced;  
 Non-nasal, unstressed, reduced; Nasal  
 (stressed, unstressed). Diphthongs:  
 Non-nasal, Nasal

After the central chapters of the book, the author includes a list of Portuguese place-names in phonetic transcription (pp. 291–365, *c.* 1050 words), a list of endnotes (pp. 367–381) and a list of references (pp. 385–388), followed by a dedication to the late King Carlos I of Portugal and his son, the late Prince Royal Luís Filipe (p. 389), and a Praise the Lord final page (p. 391).

The author's options concerning the choice of the standard dialect (the variety spoken by educated people from the country's capital, Lisbon) and the formal style of the language are explicitly explained and assumed (pp. 4–5, 248ff.). In this respect, the book may be included in a set of other resources that give the readers similar indications, such as some general dictionaries of Portuguese (e.g. Vilela 1990, ACL 2001) or some 'classics' of Portuguese orthoepy, such as the 'prosodic dictionary' by Carvalho & Deus (1890). In comparison with the latter, this work reflects contemporary European Portuguese pronunciation and provides us with more reliable phonetic descriptions and transcriptions of the sounds of the language, since it adheres very strictly to the conventions and terminology of modern phonetics.

The fact that this book is written in Portuguese may prevent many linguists and phoneticians from reading it; that is to say, there is the risk that this 'enlarged version' of what could be a *JIPA* 'Illustration of European Portuguese' will not be accessible to everyone potentially interested in it. However, a wide audience will be provided by the vast number of people around the world who speak Portuguese as their mother tongue or as a second or foreign language and of those who study Portuguese as part of their academic subjects. In a way, this book can also be seen as a sign of the importance of Portuguese as a language for scientific publications.

From a linguist's point of view, some contents of the book are especially interesting. Among these, I will highlight (i) the categorisation of speech sounds which is adopted in the presentation of the sound system of EP, (ii) the criteria for the classification and transcription

of EP sounds, (iii) the theoretical discussion about what is the current standard of EP formal style, and (iv) the major features of the main sound changes that contemporary EP is currently undergoing.

In his categorisation of speech sounds, António Emiliano departs from the terminological tradition that is found in the canonical sources of Portuguese phonetics and/or descriptive grammars (e.g. Cunha & Cintra 1984; Delgado-Martins 1988; Barbosa 1983, 1994; Mateus et al. 1990, 2003; Barroso 1999; Veloso 1999, Mateus, Falé & Freitas 2005). Based on Pike's (1943), Ladefoged's (1993) and Laver's (1994) proposals of sound categorisation, Emiliano goes beyond the traditional divisions which are the most widespread among Portuguese phoneticians, grammarians and linguists, such as the dichotomies consonants/vowels and obstruents/sonorants, for instance, and adopts non-traditional (from a Portuguese perspective) labels and categories like 'approximants' (*aproximantes*), 'contoids/vocoids' (*contoides/vocoides*), among others. In the same line of shift from the Portuguese traditional terminology, diphthongs are described as a subset of vowels (i.e. of syllabic vocoids), not as just the combination of vowels and glides (glides, in Emiliano's phonetic categorisation, are, in turn, described under the wider class of 'sonorant consonants' (*consoantes soantes*), together with nasals, rhotics and laterals). Some of the proposals presented in this book seem quite appropriate not only for the phonetic, but also for the phonological description of Portuguese, e.g. putting glides (phonetic vocoids) within the same set of speech sounds where nasals, rhotics and laterals (phonetic contoids) are found: from a phonological point of view, glides and sonorant contoids behave quite similarly in EP – for instance, in spite of important articulatory dissimilarities between them, the only rhyme position in which they are allowed is the syllable coda. Structuralist phonologists (see, for instance, Barbosa 1983, 1994), faced with this classic problem (also found in other languages), classify glides as 'consonants' as well.

Emiliano's closeness to the Anglo-American terminology and phonetic categorisation (which is laid out in detail in pp. 10–20) explains why Stephen Parkinson says, in his foreword, that this work is 'more British than Portuguese' (p. ix). Indeed, it is: the descriptive/terminological tradition adopted in this book is, undoubtedly, the intellectual lineage of BRITISH PHONETICS. By 'British phonetics' is meant here the study of speech sounds largely inspired by the work of Henry Sweet (who, more than one century ago, also inspired the 'founding father' of Portuguese phonetics, Aniceto R. Gonçalves Viana (1840–1914) – see Rogers 1940), importantly continued by authors such as Daniel Jones, David Abercrombie, John Catford, Peter Ladefoged, John Laver and John Wells (most of them explicitly cited in this book) (see Jones (1948) for a historical reference about this scientific tradition). Their influence has become particularly apparent in later approaches known as 'linguistic phonetics' (Fromkin 1985, Laver 2000) and 'descriptive phonetics' (Roach & Iivonen 1995), which one might consider as key sources of inspiration for this book. Other important features of this intellectual heritage are found in Emiliano's view of phonetics as the study and description of sound segments and sound particularities which are directly observable, systematically regular, accessible to fine auditory analysis and linguistically relevant (see, e.g. pp. ix, xvi–xvii, 6ff., 47ff.).

Bearing in mind Emiliano's break with the phonetic terminology more familiar to Portuguese authors, one might question why EP rhotics are kept, in this book, under the Portuguese traditional label of *vibrantes* ('taps and trills') (pp. 19, 372–373), defined as series of 'intermittent closure[s]' (in the terminology of Abercrombie 1967; p. 372). Articulatorily, this description may be adequate for the production of [r]/[R], traditionally described in Portuguese phonetics as *vibrante(s) múltipla(s)* ('(multiple) trill(s)'), and of [r] (traditionally labelled as *vibrante simples* ('tap')), arguably realised as 'approximants', but not for the entire class of sounds which are found as the realisations of /r/–/R/ and /r/ (ranging from the trills [r]/[R] and the tap [r] to the FRICATIVES [x χ ʁ]), which are found as possible free allophones of /r/–/R/). It is known that the classification of rhotics raises a significant number of questions and problems (see e.g. Ladefoged & Maddieson's (1996) chapter on the subject).

In the particular case of EP, the issue cannot be addressed without making reference to the considerable variation which affects this class of sounds, in which fricatives seem to be presently occupying places once filled by trills (a very short comment on this is found on p. 251); nonetheless, the author does not abandon the term *vibrante* ('trill/tap') as the generic label for all the sounds included in this category (in line of his assumption that [ʀ] is the standard realisation of /r/-/R/, despite the fact that 'historical' [r] is still articulated by many speakers from Lisbon (some of them keeping both [ʀ] and [r]) – p. 255).

Another linguistically interesting aspect of this book is its systematic reflection on the articulatory classification and the phonetic symbol which are offered for each sound. As far as phonetic symbols are concerned, the author strictly adheres to the full set of IPA symbols and conventions, found in IPA (1999) (p. 42) and criticises the fact that not all academic publications in the field of Portuguese phonetics follow them more carefully (p. 46), even though the IPA system may bear a certain level of inadequacy for the transcription of some EP sounds, such as the central vowels [a], [ɐ] and [i] (this subject is roughly discussed in pp. 43–44, 374–375).

In this regard, attention should be also drawn to the thorough discussion about the several levels of detail of phonetic transcription, which is carried out in pp. 47ff. Based upon Ladefoged's (1993) typology of phonetic transcription, which goes beyond the classic dichotomy narrow/broad, Emiliano chooses to follow a PHONEMIC, SIMPLE transcription throughout his examples, with the occasional marking of allophonic, comparative realisations (p. 51). Bearing in mind the normative purpose of this book and its non-professional readership (see above), this option seems quite adequate and effective. The reader who is aware of this choice can assess much better certain details found in the transcriptions which are given in the subsequent chapters of the book.

A third theme that makes this book very pertinent from a linguistic viewpoint is the information it contains about sound variation and sound change in EP. First, the author reflects upon the features which characterise the 'standard' norm aimed at by his phonetic transcriptions. I already mentioned, in this review, the author's main assumptions regarding this subject. In addition, a considerable amount of information is also given not only about the phonetic features that were included in those transcriptions but also, more interestingly, about those that were EXCLUDED from the normative transcriptions throughout the book. The author gives valuable details regarding other varieties and styles of Portuguese spoken in Portugal. Among such features of 'non-standard, non-formal' contemporary European Portuguese, the most striking is the full unvoicing/deletion of unstressed vowels. In turn, this type of vowel reduction gives rise to a series of other related phenomena, such as consonant rounding, lengthening and (phonetic) nuclearisation and the production of long, irregular consonant clusters (pp. 250ff.). All these changes are not reflected in Emiliano's normative phonetic transcriptions, which are characterised by a conservative approach that is called here 'maximal syllabism' (p. 5). This consists of preserving all vowels and syllables (stressed AND unstressed) of each word. The strong tendency towards deletion of unstressed vowels in colloquial EP (northern and southern dialects) is, indeed, a well-known fact for those who study the language – and it is among the main phonetic and phonological differences between European and Brazilian Portuguese. This section of the book is invaluable for anyone who wants to grasp, in a few pages, the most characteristic features of variation and change in contemporary EP. In addition, it contains a set of very interesting hints and (implicit) suggestions of research for those who wish to pursue the study of current EP sound change.

This book will be an excellent companion to both the pronunciation AND the study of Portuguese. As a notable contribution to the standardisation of modern EP pronunciation (standard dialect, formal style), it might be of great interest to those who use the language in professional situations: actors, journalists, teachers, politicians, solicitors, singers, and call-centre operators, among others. In my opinion, linguists, students and researchers of Portuguese and general phonetics would greatly benefit from the reading of this book as well.

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This book provides a compact overview of various models of phonology, comparing the benefits and problems of each one in representing the wide array of phonological phenomena