



原版现代语言学丛书

PHONOLOGY (Second Edition)

音系学 (第二版)

Philip Carr and Jean-Pierre Montreuil



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## 出版说明

语言学研究是外教社学术出版的重要领域之一。外教社坚持原创与引进并举，近年来陆续引进出版了《语言与教育百科全书》（第2版）、《语言与语言学百科全书》（第2版）、“牛津应用语言学丛书”、“牛津语言学入门丛书”、“语用学研究前沿丛书”等国外语言学研究的一流成果，广受赞誉，为我国语言学的教学研究和改革提供了宝贵的启示。

为了帮助广大语言学初学者更好地掌握语言学的最新成果和研究热点，外教社特从 Palgrave 出版社遴选引进了这套权威、实用的“原版现代语言学丛书”，其中不少分册都是几经修订的最新版。

本套丛书对当代语言学和相关学科的基本知识做了全面简介，涉及语用学、语义学、音系学、句法理论、交际障碍等研究领域，语言简明，举例丰富，注重与学习者的互动，设置了练习题（部分含答案）、扩展阅读等辅助学习的内容。丛书既可作为语言学入门教材在高校课堂上使用，也可供感兴趣的读者自学阅读，具有很强的可读性和实用性。

相信本套丛书的引进将进一步满足广大语言学专业师生对权威、实用的语言学教材及课外阅读资料的需求，推动我国语言学教学和科研事业的长远发展。

# **Phonology**

**Second Edition**

**PHILIP CARR**

**AND**

**JEAN-PIERRE MONTREUIL**

© Philip Carr 1993

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# Preface to the Second Edition

The first edition of this textbook appeared in 1993. It was intended as an introduction to generative phonology and adopted a historical perspective. It introduced the phonemic principle, the problems with that principle and proposed solutions to those problems using the standard generative phonology framework of the late 1960s. That model was based on Chomsky and Halle's 1968 book, *The Sound Pattern of English* (SPE), and was known as the SPE model. The book also covered theoretical developments in generative phonology from SPE through to the early 1990s.

The book was widely used, but became outdated, and thus less useful for students. At the time of its release, a new framework was emerging, known as Optimality Theory (OT). OT has since become widely used, so we have updated the book to include it (Chapters 11 and 12). We have also included coverage of what is known as 'phonological weight', which is introduced and exemplified in Chapter 10. In this new edition, we have cut out the final chapter of the first edition, conflated Chapters 6 and 7 and updated several other chapters. We have increased the size of the book, but we have avoided making it too long.

We have retained the historical perspective of the first edition, so that this edition now covers an even larger chronological span than the first. The range of languages covered has been considerably expanded. We hope that this revised edition will prove accessible and useful for university students seeking to get to grips with theoretical phonology. We have retained the emphasis on exercises: in our view, one cannot understand phonological analysis without sitting down and engaging in it.

PHIL CARR  
JEAN-PIERRE MONTREUIL

# Preface to the First Edition

## To the student

This book is a beginners' introduction to phonology, and concentrates mostly on what is known as generative phonology. It assumes that the reader has taken a course in elementary articulatory phonetics, but it assumes no knowledge whatsoever of phonology. A revision chapter on phonetic terminology and a chart of the symbols which constitute the International Phonetic Alphabet are included for reference, or for those who need to brush up on the subject. It is hoped that the present textbook will allow students to move on to more advanced textbooks, such as Kenstowicz and Kisseberth (1979), and also to the source literature on the subject. The reader should also consult Hyman (1975) for further details and issues in standard generative phonology, Lass (1984a) for a broader view of phonology (beyond generative work), and Anderson (1985) for a historical perspective on twentieth-century phonology. Syntheses and surveys of current theoretical work, such as Goldsmith (1990) and Durand (1990), as well as the literature itself, should also be approachable after reading Chapters 8–11.

The book begins with exercises within and at the end of chapters, many of which should prove easy for students who take naturally to linguistic analysis, and tractable for those who do not. After the first few chapters, there are fewer, and these are at the end of chapters. (Some sample answers are given at the end of the book.) For most students, it would be rather pointless to attempt reading the early chapters without simultaneously doing the exercises; the exercises in the later chapters are intended to help students to think about the theories discussed by focusing their attention on particular analyses. It is important for students to retain all their exercise work, since earlier exercises may be referred back to, or reworked, at a later stage.

The following abbreviations are used in exercises and examples: 'pl.' (plural), 'sg.' (singular), 1PS, 2PS, 3PS (1st, 2nd and 3rd person singular); nom. (nominative), acc. (accusative), gen. (genitive), masc. (masculine), fem. (feminine).

## To the teacher

This book is an attempt at a solution to a problem. The problem is this: how to introduce generative phonology, without trivialising the subject, within the



confines of a ten-week course, to students who major in subjects other than linguistics, and thus may not take their study of the subject any further. The problem is less acute when those other subjects require similar sorts of thinking, but when the majority of students have, for several years, spent the bulk of their time following courses requiring quite different sorts of thinking, difficulties arise. In England (much less so in the US and in the continental system, which also survives in Scotland), these difficulties are in large part a consequence of the fact that many such students have been educated in the English 'narrow specialism' tradition, which has tended to bolster the 'two cultures' arts/science divide. These students often tend to view themselves as 'arts types' rather than 'science types'; for many of them, the mere sight of diagrams in a book can prove anathema. The subject therefore needs to be introduced in as gentle a way as possible, with much exemplification, and exercises which do not throw the student in at the deep end. Thereafter, more complex problems can be investigated, and the student can then find a way into the subject. The problem is a challenging one, and in attempting to resolve it, one can go some way towards undermining the rather limiting 'two cultures' division, which fails so clearly to accommodate the discipline of linguistics. While there are excellent textbook introductions to standard generative phonology, such as Kenstowicz and Kisseberth (1979), and impressive surveys of current theory, such as Goldsmith (1990), they are simply too detailed to be used on such a course, given the time available and the sorts of student in attendance.

The book aims to introduce standard generative phonology in a relatively simple way in Chapters 1–6, and then, in Chapters 7–11, to introduce the student to more recent work in phonological theory. Since the text thus falls into two parts, it is possible to teach just the first six or seven chapters if time is short; the last chapters may then be used as an introduction to a more advanced course, for which a textbook on current work, and the literature itself, may be used. No attempt is made to present alternative, non-generative, approaches to phonology: new students have enough trouble trying to get the hang of one framework without having to cope with several; other approaches can be tackled once the generative approach is familiar. This is not to say that a non-critical attitude to generative work is fostered; analyses are often shown to be revisable, competing generative theories are discussed, and the interplay of data and theory is stressed.

It is best if students have seminars/tutorials in which to discuss the exercises in each chapter before proceeding to the next, but the exercises should be tractable even if this is not possible; some sample answers are given at the end of the book.

# Acknowledgements to the Second Edition

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Phil Carr would like to thank Jean-Pierre Montreuil for agreeing to co-write this second edition.

# Acknowledgements to the First Edition

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One forever owes a debt to one's teachers. I thank those who taught me phonetics and phonology in the Linguistics Department at Edinburgh University: Ron Asher, Gill Brown, Karen Currie, Jody Higgs, Sandy Hutcheson, Alan Kemp, Roger Lass, John Laver and Besty Uldall. John Anderson and Heinz Giegerich of the English Language Department at Edinburgh taught me Dependency and Metrical Phonology, respectively: I hope they will forgive me for any misrepresentation of those subjects which may appear in this book. I also hope that Ron Asher and Gill Brown will forgive me for any liberties which I may (inadvertently) have taken with their works, on Tamil and Lumasaaba, respectively. My greatest debt is to Roger Lass, who I was fortunate to have as a teacher and supervisor just prior to his departure from Edinburgh. I thank him for presenting phonology in such a fresh and stimulating way, and for continuing to do so.

At several stages during the writing of this textbook, Inès Brulard has put up with my incursions upon her personal computer, desk space and library card, for which she deserves praise, gratitude and a bottle of Château Monbousquet 1982.

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# Revision of Phonetics

## 1. Consonants

Consonants are normally specified for three descriptive parameters: voicing state, place of articulation and manner of articulation.

**Voicing state.** While we may reasonably describe most consonants as either voiced (with vocal cord vibration) or **voiceless** (without vocal cord vibration), we may also indicate full or partial devoicing by placing the diacritic [̥] beneath the symbol for the appropriate voiced segment, as in [d̥] a devoiced alveolar stop. The symbols we use in this book are mostly taken from the International Phonetic Alphabet (IPA) which is given on p. 11.

**Place of articulation** distinctions are as follows. (See the diagram of the organs of speech on p. 12.) Where the articulators are the lips, the sound in question is **bilabial**. Where the active articulator is the lower lip and the passive articulators are the upper teeth, the sound is **labiodental**. **Dental** sounds are articulated with the tip of the tongue and the upper teeth. **Alveolar** sounds are articulated with the tip/blade of the tongue and the alveolar ridge. **Post-alveolar** sounds are retracted somewhat from this position; an example is the post-alveolar approximant [ɹ] found in many accents of English. In **palatal** sounds, the active articulator is the front of the tongue and the passive articulator is the hard palate. The back of the tongue and the soft palate are, respectively, the active and passive articulators in **velar** sounds, whereas in **uvular** sounds, the articulators are the back of the tongue and the uvula. The walls of the pharynx are the articulators in **pharyngeal** sounds, and the vocal cords themselves are the articulators in **glottal** sounds.

**Manner of articulation** is specified according to degree of stricture (the degree to which the articulators impede the flow of air). The three principal degrees of stricture are as follows:

1. Complete closure, where the articulators seal off the flow of air completely; these sounds are called **stops** or **plosives**.
2. Close approximation, where the articulators come very close to one another without actually sealing off the escape of air, such that turbulence, and thus audible friction, are produced; these sounds are called **fricatives**.
3. Open approximation, where the articulators are not sufficiently close to induce turbulence and audible friction; such sounds are called **approximants**. They are normally defined as being voiced.



## Bilabial

- [p] is a voiceless bilabial stop.
- [b] is a voiced bilabial stop.
- [ɸ] is a voiceless bilabial fricative: it can be heard in Japanese in, for instance, the word *Fuji* [ɸɯɰdʒi].
- [β] is a voiced bilabial fricative: it occurs in Tamil, as in the word for 'twenty' [ɪɾʊβɑɖu].
- [β̹] is a voiced bilabial approximant: it can be heard in Spanish in, for example, [β̹β̹ɛɾ] ('to have'). The symbol used here is the same as for the fricative, but with the subscript diacritic meaning 'lowered' added.

- [f] is a voiceless labiodental fricative.
- [v] is its voiced counterpart.
- [ʋ] is a voiced labiodental approximant; you can practise this by altering a [v] such that the lower lip does not actually come into contact with the teeth. It occurs in Tamil.

It is not easy to hear the difference between, on the one hand, the dental stops [t̪] and [d̪] and, on the other hand, the alveolar stops [t] and [d], but in many languages it is the dental rather than the alveolar stops which occur: in Tamil, Spanish and Polish, for instance.

- [θ] is a voiceless dental fricative which occurs in English, as in *thing*.  
[ð] is the voiced equivalent. It too occurs in English, although, in words like *that*, there is often little or no friction, in which case the diacritic meaning ‘frictionless’ may be placed beneath the symbol for the fricative, thus [ð̥]. This therefore denotes a voiced dental approximant, of the sort found in the Spanish word *hablado* [əβləð̥o].

In addition to the stops [t] and [d], there are the alveolar fricatives [s] and [z].

Among the approximants and fricatives, there is a distinction between **central** and **lateral** sounds: in central sounds, the airflow escapes along a central groove in the active articulator, while in lateral sounds, there is closure at this central point, with the airflow escaping along the sides of the active articulator. Thus, the voiced lateral alveolar approximant [l] has closure at the centre of the alveolar ridge and lateral escape of airflow, while in the voiced central approximant [ɹ], there is closure between the sides of the tongue and