Fundamentals of Linguistics

What is Morphology?

Second Edition

Mark Aronoff
and Kirsten Fudeman

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Preface

This little book is meant to introduce fundamental aspects of morphology to students with only a minimal background in linguistics. It presupposes only the very basic knowledge of phonetics, phonology, syntax, and semantics that an introductory course in linguistics provides. If, having worked through this book, a student has some understanding of the range of basic issues in morphological description and analysis; can appreciate what a good morphological description looks like, how a good morphological analysis works and what a good theory of morphology does; can actually do morphological analysis at an intermediate level; and most importantly understands that linguistic morphology can be rewarding; then the basic goal of the book will have been met.

The book departs from a trend common among current linguistics textbooks, even at the elementary level, which tend to be quite theoretical in orientation and even devoted to a single theory or set of related theories. We have chosen instead to concentrate on description, analysis, and the fundamental issues that face all theories of morphology. At the most basic level, we want to provide students with a grasp of how linguists think about and analyze the internal structure of complex words in a representative range of real languages. What are the fundamental problems, regardless of one's theoretical perspective? We therefore dwell for the most part on questions that have occupied morphologists since the beginnings of modern linguistics in the late nineteenth century, rather than on more detailed technical points of particular theories.

Of course, this means that we assume that there are general questions, but in morphology, at least, the early modern masters were grappling with many of the same questions that occupy us to this day. Descriptions and analyses that Baudouin de Courtenay wrote in the 1880s are not

merely understandable, but even interesting and enlightening to the modern morphologist. The same is true of the work of Edward Sapir and Roman Jakobson from the 1920s and 1930s. Yes, the terminology and theories are different, but the overall goals are much the same. That is not to say that no progress has been made, only that the basic issues about word-internal structure have remained stable for quite a long time.

One fundamental assumption that goes back to the beginnings of modern linguistics is that each language is a system where everything holds together ("la langue forme un système où tout se tient et a un plan d'une merveilleuse rigueur": Antoine Meillet). More recent linguists have stressed the importance of universal properties that all languages have in common over properties of individual languages, but not even the most radical universalists will deny the systematicity of individual human languages. It is therefore important, from the very beginning, that a student be presented, not just with fragmentary bits of data from many languages, as tends to happen with both morphology and phonology, but with something approaching the entire morphological system of a single language. To that end, we have divided each of the chapters of this book up into two parts. The first part is the conventional sort of material that one would find in any textbook. Here our focus is often on standard American English, although we present data from many other languages, as well. The second part describes in some detail part of the morphology of Kujamaat Jóola, a language spoken in Senegal. For each chapter, we have tried to select an aspect of Kujamaat Jóola morphology that is close to the topic of the chapter. By the end of the book, the student should have a reasonable grasp of the entire system of Kujamaat Jóola morphology and thus understand how, at least for one language, the whole of the morphology holds together. Of course, no one language can be representative of all the world's languages, and morphology is so varied that not even the most experienced analyst is ever completely prepared for what a new language may bring. But students certainly will benefit from a reasonably complete picture of how a single language works.

The Kujamaat Jóola material complements the material in the main portion of the chapter, but it is not meant to mirror it exactly. Our inclusion of particular Kujamaat Jóola topics was dictated in part by the data that were available to us. Our primary sources were J. David Sapir's *A Grammar of Diola-Fogny*, his 1967 revisions to the analysis of the Kujamaat Jóola verb (Thomas and Sapir 1967), and his unpublished

dictionary. In a number of cases, we have used the Kujamaat Jóola section of each chapter to delve into topics not treated in the main portion, or treated only superficially. Thus chapters 2 and 7 contain detailed examinations of Kujamaat Jóola noun classes and verb morphology, respectively, and in chapter 3 we address its rich interactions between vowel harmony and morphology.

We chose Kujamaat Jóola for this book because its morphology, though complex and sometimes unusual, is highly regular, which makes it an excellent teaching vehicle. Some might question this choice, preferring a language with a higher degree of morphological fusion. Such a language might have led to theoretical issues, for example, that we do not explore in any detail here. However, we felt that in a book of this type, aimed at the beginning or intermediate-level morphologist, Kujamaat Jóola was an ideal choice.

One value of presenting beginning students with the largely complete morphological description of a single language is that descriptive grammars (which more often than not concentrate on morphology and phonology) form a mainstay of linguistic research, not only at more advanced levels of study, but throughout a researcher's career. The ability to work through a descriptive grammar is not innate, as many of us assume, but an acquired skill that takes practice. The Kujamaat Jóola sections taken together comprise an almost complete descriptive morphology of that language, so that by the end of the book students will have had the experience of working through an elementary morphological description of one language and will be somewhat prepared to tackle more complete descriptions when the time comes.

This brings us to the topic of how we intend the Kujamaat Jóola sections of this book to be used. Because of their inherent complexity, it is crucial that the instructor not simply assign these sections as readings. Instead, each must be gone over carefully in class until the students have a good grasp of the material in it. Otherwise, students are not likely to extract full value from the Kujamaat Jóola sections. Although we feel that these sections will be both useful and rewarding, it is also the case that the main portions of the chapter are freestanding, and an instructor who prefers not to do some or all of the Kujamaat Jóola sections does not have to.

Each chapter closes with a set of problems that are cross-referenced with the text, and we expect that the solutions to these problems will be discussed in detail in class. Some simpler exercises are integrated into the text itself, with answers provided. We feel that some exercises,

particularly open-ended questions, are especially well suited to class discussion, and so instructors may decide not to assign them in written form. Most chapters also contain Kujamaat Jóola exercises designed to get students to apply the data we have provided creatively and analytically. Chapter 1 contains two sample problem sets with answers (section 1.5.3). We suggest that instructors assign these separately from the rest of the chapter reading and that they ask students to write them out as they would a regular assignment, without reading the explanation and analysis that go with them. Then students can check their work on their own. This should prepare them for doing some of the other analytical problems in the text.

Another feature of this book is a glossary. The terms in it appear in **bold** the first time they are used or explained in the text.

New to the second edition are suggestions for further reading at the end of each chapter. Some of these suggestions are classic treatments of morphological problems, and others represent more recent analyses. We have chosen a number of them because of the clear way in which they illustrate phenomena raised in the chapter. Finally, some of the suggested readings are short enough that instructors might want to assign them in an introduction to morphology class. Other, longer readings could be assigned in part or used by students as they work on morphological problems on their own, whether independently or as a class assignment. While not listed in the further reading for any of the chapters, another extremely useful reference work for students is Bauer's *A Glossary of Morphology* (2004).

Ideally, each class session will be divided into three parts, corresponding to the division of the chapters: exposition of new pedagogical material; detailed discussion of Kujamaat Jóola; and discussion of solutions for the homework problems of the day (we assume that problems will be assigned daily and that students' performance on them will comprise a good part of the basis of their grades in the course).

We close with a warning to both the instructor and the student: this book does not pretend to cover all of morphology, but rather only a number of general topics drawn from the breadth of the field that are of special interest to its authors. We have purposely not gone deeply into the aspects of morphology that interact most with other central areas of linguistics (phonology, semantics, and syntax), because that would require knowledge of these areas that beginning students might not have. Thus there is little discussion of clitics, for example. In this, the second edition, we have added more coverage of exciting new work

that uses experimental and computational methods, methods that are bound to be more central in the future, but we encourage instructors to supplement our text with current readings in this cutting-edge field. In closing, please permit us to remind the user that our ambitions in writing this volume are quite modest. We do not expect students who have worked through this book to have a full understanding, but to have developed a lasting taste for morphology that, with luck, will sustain them as it has us.

We owe a debt of thanks to the many people who helped us as we worked on this project. We are especially grateful to the various people who read drafts of the manuscript and made suggestions on how to make it better. These include Harald Baayen, Donald Lenfest, Lanko Marusic, and two anonymous Blackwell reviewers. We give special thanks to Phil Baldi and Barbara Bullock, who tested the original manuscript in a morphology class at the Pennsylvania State University, and to five anonymous student reviewers. Their comments were particularly thorough and helped us to improve this book on many different levels. Harald Baayen and some of our anonymous student reviewers also suggested a number of excellent exercises, which we incorporated into the current version. Peter Aronoff read the original manuscript over his winter break and still took a linguistics course the next semester. For their input and discussion, we thank Bill Ham, Alan Nussbaum, and Draga Zec. We are also grateful to Jane Kaplan, who shared her collection of language-related cartoon strips, advertisements, and other magazine and newspaper clippings with us.

J. David Sapir generously gave us permission to reproduce copious amounts of Kujamaat Jóola data from his published and unpublished work, and Eugene Nida allowed us to include exercises first published in his classic textbook on morphology. We are pleased that his exercises will be introduced to a new generation of students.

We are also grateful to the many people who wrote to us after using the first edition of this textbook. Many of them requested an answer key. The second edition indeed has one, available on the Wiley website at www.wiley.com/go/Aronoff. Jenny Mittelstaedt carefully prepared a list of questions and comments that enabled us to make a number of corrections and clarifications to the material presented here. Bill Ham also offered useful suggestions. Finally, reviews of the first edition in print and online by Barli Bram, Malcolm Finney, Margaret Sharp, John Stonham, Gregory Stump, and Jonathan White were enormously helpful to us in identifying elements of the book, small and large, that

needed to be revised or updated. In addition to the addition of suggestions for future reading and the expansion (and renaming) of chapter 8, "Morphological Productivity and the Mental Lexicon," this new edition has been thoroughly revised for style and clarity; it has been updated to reflect current research; its glossary and reference list have been expanded; and some exercises have been revised or added.

This book owes a great deal to the guidance and particularly the patience of the editors at Wiley-Blackwell over the years: Philip Carpenter, Sarah Coleman, Danielle Descoteaux, Tami Kaplan, Julia Kirk, Beth Remmes, and Steve Smith. Thanks also to our project manager, Fiona Sewell. Writing this book has been a joint effort, and we would like to emphasize that the order of the authors' names given on the title page is alphabetical.

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The publisher apologizes for any errors or omissions in the above list and would be grateful if notified of any corrections that should be incorporated in future reprints or editions of this book.

Abbreviations

A, adj	adjective
abs	absolutive
acc	accusative
act	active
adv	adverb
agr	agreement
an	animate
apass	antipassive
app	applicative
Ar.	Arabic
asp	aspect
C	consonant
caus	causative
cl	noun class
ct	combining with a circumstantial topic
d	declarative
def	definite
dem	demonstrative
dim	diminutive
dir	directional
du	dual
emph	emphatic
erg	ergative
excl	exclusive
f	feminine
foc	focus
Fr.	French
fut	future

fv	final vowel
gen	genitive
hab	habitual
imp	imperfective
imper	imperative
inan	inanimate
inc	dubitive-incompletive
incl	inclusive
ind	indicative
inf	infinitive
irr	irrealis
loc	locative
m	masculine
Mdk.	Mandinka
n, N	noun
ne	noun emphasis
neg	negative
nom	nominative
nonfut	non-future
nonhum	non-human
NP	noun phrase
nts	combining with a non-topical subject
obj	object
part	participle
partic	particulizer
pass	passive
perf	perfective
pl	plural
Port.	Portuguese
poss	possessive
pres	present
prog	progressive
prtc	particle
ps	past subordinate
qm	question marker
redup	reduplicative
refl	reflexive
rel	relativizer
res	resultative
sg	singular

stat	stative
sub	subject
subord	subordinating morph
tns	tense
tri	trial
v, V	verb; vowel; theme vowel
VP	verb phrase

Remarks on Transcription

Modern linguistics has been struggling with the problem of phonetic and phonological transcription since its inception. The International Phonetics Association was founded in 1886 with the goal of providing for linguistics a worldwide standard system for naming sounds, the International Phonetic Alphabet (IPA), akin to that universal standard language used in chemistry and physics since the mid-nineteenth century to name the elements and their compounds. But linguists have long resisted this standardization, especially for phonological transcription, much to the dismay of students over the generations. There are many reasons for this resistance. The phonological transcription of a language is often driven by the desire to develop a practical orthography, in which phonetic accuracy and consistency take a back seat to ease of use. Also, phonological theorists since the beginning of that field have enjoyed a love–hate relationship with phonetics, arguing over the true nature of the connection between a phoneme and its various phonetic realizations, leading them to downplay the importance of consistency for phonological transcription across languages, since each language has its own unique phonological system. Leonard Bloomfield, for example, one of the great linguists of the twentieth century, used the symbol U for schwa (IPA ə) in his Menomini grammar, largely for typographical convenience.

In this book, we have made a compromise. Wherever possible or practicable, we have used the IPA, a copy of which is included facing p. 1. We have deviated from the IPA chiefly in our representation of the English approximant rhotic, choosing to use instead the symbol <r> for simplicity. (For more on the International Phonetics Association and the International Phonetic Alphabet, visit the website of the Association at http://www.langsci.ucl.ac.uk/ipa/index.html.) But many languages

have well-established orthographies or systems of phonological transcription, which we have not disturbed. Most prominently, in transcribing Kujamaat Jóola, we have adopted wholesale the system used by J. David Sapir in the grammar from which our data and description are adapted. We have endeavored, though, in all cases where transcription departs from the IPA, to give the IPA equivalent for non-standard symbols.

This lack of consistency may be a little confusing for the student at first, but we hope that it will teach students to be careful, because the symbols used in phonological transcription may sometimes be used in arbitrary and even capricious ways, so that it is important to pay close attention to the phonetic description that accompanies the symbols at their introduction. Reading Bloomfield's Menomini grammar without knowing that U stands for schwa can lead to serious misunderstanding.

The International Phonetic Alphabet

Revised to 2005

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)

Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	’	Examples:
|	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
!	(Post)alveolar	ʄ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
‖	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

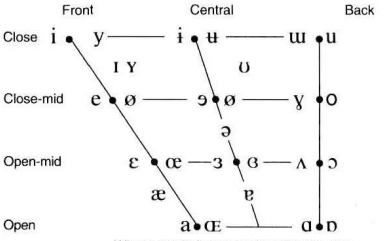
OTHER SYMBOLS

ʍ	Voiceless labial-velar fricative	ɕ ʑ	Alveolo-palatal fricatives
w	Voiced labial-velar approximant	ɺ	Voiced alveolar lateral flap
ɥ	Voiced labial-palatal approximant	ʩ	Simultaneous ʃ and x
ʜ	Voiceless epiglottal fricative		
ʢ	Voiced epiglottal fricative		
ʔ	Epiglottal plosive		

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.

k͡p t͡s

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

SUPRASEGMENTALS

ˈ	Primary stress	ˌfoʊnəˈtɪʃən	
ˌ	Secondary stress		
ː	Long	eː	
ˑ	Half-long	eˑ	
˘	Extra-short	ĕ	
|	Minor (foot) group		
‖	Major (intonation) group		
.	Syllable break	ɹi.ækt	
‿	Linking (absence of a break)		

TONES AND WORD ACCENTS

LEVEL			CONTOUR	
˥ or ˦	Extra high	˩˥ or ˨˦	↗	Rising
˦	High	˥˩	↘	Falling
˧	Mid	˧˥	↗	High rising
˨	Low	˩˧	↗	Low rising
˩	Extra low	˦˨	↘	Rising-falling
↓	Downstep	↗	Global rise	
↑	Upstep	↘	Global fall	

DIACRITICS

Diacritics may be placed above a symbol with a descender, e.g. ŋ̊

◌̥	Voiceless	n̥ d̥	◌̤	Breathy voiced	b̤ a̤	◌̪	Dental	t̪ d̪
◌̬	Voiced	s̬ t̬	◌̰	Creaky voiced	b̰ a̰	◌̺	Apical	t̺ d̺
◌ʰ	Aspirated	tʰ dʰ	◌̼	Linguolabial	t̼ d̼	◌̻	Laminal	t̻ d̻
◌˖	More rounded	ɔ˖	◌ʷ	Labialized	tʷ dʷ	◌̃	Nasalized	ẽ
◌˗	Less rounded	ɔ˗	◌ʲ	Palatalized	tʲ dʲ	◌ⁿ	Nasal release	dⁿ
◌̟	Advanced	u̟	◌ˠ	Velarized	tˠ dˠ	◌ˡ	Lateral release	dˡ
◌̠	Retracted	e̠	◌ˤ	Pharyngealized	tˤ dˤ	◌̚	No audible release	d̚
◌̈	Centralized	ë	◌̴	Velarized or pharyngealized	ɫ			
◌̽	Mid-centralized	e̽	◌̝	Raised	e̝	(◌̝)	= voiced alveolar fricative)	
◌̩	Syllabic	n̩	◌̞	Lowered	e̞	(◌̞)	= voiced bilabial approximant)	
◌̯	Non-syllabic	e̯	◌̘	Advanced Tongue Root	e̘			
◌˞	Rhoticity	ɚ a˞	◌̙	Retracted Tongue Root	e̙			

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