## Introducing Phonology

This accessible textbook provides a clear and practical introduction
to phonology, the study of sound patterns in language. Designed for
undergraduates with only a basic knowledge of linguistics, it teaches in a
step-by-step fashion the logical techniques of phonological analysis and
the fundamental theories that underpin it. Through over sixty graded
exercises, students are encouraged to make their own analyses of
phonological patterns and processes, based on extensive data and
problem sets from a wide variety of languages. *Introducing Phonology*
equips students with the essential analytical skills needed for further
study in the field, such as how to think critically and discover
generalizations about data, how to formulate hypotheses, and how to
test them. Providing a solid foundation in both the theory and practice
of phonology, it is set to become the leading text for any introductory
course, and will be invaluable to all students beginning to study the
discipline.

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Linguistics,* of which he is the editor.

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# Introducing Phonology

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# About this book

This is an introductory textbook on phonological analysis, and does not assume any prior exposure to phonological concepts. The core of the book is intended to be used in a first course in phonology, and the chapters which focus specifically on analysis can easily be covered during a ten-week quarter. Insofar as it is a textbook in phonology, it is not a textbook in phonetics (though it does include the minimum coverage of phonetics required to do basic phonology), and if used in a combined phonetics and phonology course, a supplement to cover more details of acoustics, anatomy and articulation should be sought: Ladefoged 2001a would be an appropriate phonetics companion in such a course.

The main emphasis of this book is developing the foundational skills needed to analyze phonological data, especially systems of phonological alternations. For this reason, there is significantly less emphasis on presenting the various theoretical positions which phonologists have taken over the years. Theory cannot be entirely avoided, indeed it is impossible to state generalizations about a particular language without a theory which gives you a basis for postulating general rules. The very question of what the raw data are must be interpreted in the context of a theory, thus analysis needs theory. Equally, theories are formal models which impose structure on data – theories are theories *about* data – so theories need data, hence analysis. The theoretical issues that are discussed herein are chosen because they represent issues which have come up many times in phonology, because they are fundamental issues, and especially because they allow exploration of the deeper philosophical issues involved in theory construction and testing.

# Acknowledgments

# A note on languages

The languages which provided data for this book are listed below. The name of the language is given, followed by the genetic affiliation and location of the language, finally the source of the data ("FN" indicates that the data come from my own field notes). Genetic affiliation typically gives the lowest level of the language tree which is likely to be widely known, so Bantu languages will be cited as "Bantu," and Tiv will be cited as "Benue-Congo," even though "Bantu" is a part of Benue-Congo and "Tiv" is a specific language in the Tivoid group of the Southern languages in Bantoid. Locations will generally list one country but sometimes more; since language boundaries rarely respect national boundaries, it is to be understood that the listed country (or countries) is the primary location where the language is spoken, especially the particular dialect used; or this may be the country the language historically originates from (the Yiddish-speaking population of the US appears to be larger than that of any one country in Eastern Europe, due to recent population movements).

Akan [Volta-Congo; Ghana]: Dolphyne 1988; Charles Marfo p.c.

Amharic [Semitic; Ethiopia]: Whitley 1978; Grover Hudson p.c.

Angas [Chadic; Nigeria]: FN.

Arabela [Zaparoan; Peru]: Rich 1963.

Aramaic (Azerbaijani) [Semitic; Azerbaijan]: Hoberman 1988.

Araucanian [Araucanian; Argentina, Chile]: Echeverría and Contreras 1965; Hayes 1995.

Armenian [Indo-European; Armenia, Iran, Turkey]: Vaux 1998 and p.c.

Axininca Campa [Arawakan; Peru]: Payne 1981 and p.c.

Bedouin Hijazi Arabic [Semitic; Saudi Arabia]: Al-Mozainy 1981 and p.c.

Bukusu [Bantu; Kenya]: Nasiombe Mutonyi p.c.

Catalan [Romance; Spain]: Lleo 1970, Kenstowicz and Kisseberth 1979; Wheeler 1979; Hualde 1992.

Chamorro [Austronesian; Guam]. Topping 1968; Topping and Dungca 1973; Kenstowicz and Kisseberth 1979; Chung 1983.

Chukchi [Chukotko-Kamchatkan; Russia]: Krauss 1981.

Digo [Bantu; Kenya and Tanzania]: Kisseberth 1984.

Efik [Benue-Congo; Nigeria]: FN.

Eggon [Benue-Congo; Nigeria]: Ladefoged and Maddieson 1996.

Evenki [Tungusic; Russia]: Konstantinova 1964; Nedjalkov 1997; Bulatova and Grenoble 1999.

Ewe (Anlo) [Volta-Congo; Benin]: Clements 1978.

Farsi [Indo-European; Iran]: Obolensky, Panah and Nouri 1963; Cowan and Rakušan 1998.

Finnish. [Uralic; Finland, Russia]: Whitney 1956; Lehtinen 1963; Anders Holmberg p.c.

Fula [West Atlantic; West Africa]: Paradis 1992.

Gã [Volta-Congo; Ghana]: FN in collaboration with Mary Paster.

Luganda [Bantu; Uganda]: Cole 1967; Snoxall 1967.

Gen [Kwa; Togo]: FN.

Greek [Indo-European; Greece]: Georgios Tserdanelis p.c.

Hebrew [Semitic; Israel]: Kenstowicz and Kisseberth 1979.

Hehe [Bantu; Tanzania]: FN in collaboration with Mary Odden.

Holoholo [Bantu; Congo]: Coupez 1955.

Hungarian [Uralic; Hungary]: Vago 1980, Kenesei, Vago and Fenyvesi 1998, 2000.

Icelandic [Germanic; Iceland]: Einarsson 1945; Jónsson 1966; Oresnik 1985.

Japanese [Japanese; Japan]: Martin 1975.

Jita [Bantu; Tanzania]: Downing 1996.

Kamba [Bantu; Kenya]: FN in collaboration with Ruth Roberts-Kohno.

Karok [Hokan; USA]; Bright 1957, Kenstowicz
   and Kisseberth 1979.
Keley-i [Austronesian; Phillipines]: Kenstowicz
   and Kisseberth 1979; Lou Hohulin p.c.
Kenyang [Bantu; Cameroun]: FN.
Kera [Chadic; Chad]: Ebert 1975; Kenstowicz
   and Kisseberth 1979.
Kerewe [Bantu; Tanzania]: FN.
Kikuyu [Bantu; Kenya]: Clements 1984.
Kimatuumbi [Bantu; Tanzania]: FN.
Kipsigis [Nilotic; Kenya]: FN.
Klamath [Penutian; USA]: Barker 1963, 1964.
Koasati [Muskogean; Louisiana]: Kimball 1991.
Kolami [Dravidian; India]: Emeneau 1961.
Korean [Korean; Korea]: Martin 1992; Younghee
   Chung, Noju Kim and Misun Seo p.c.
Koromfe [Gur; Bourkina Fasso]: Rennison 1997.
Kotoko [Chadic; Cameroun]: FN.
Krachi [Kwa; Ghana]: Snider 1990.
Kuria [Bantu; Kenya]: FN.
Lamba [Bantu; Zambia]: Doke 1938, Kenstowicz
   and Kisseberth 1979.
Lardil [Pama-Nyungan; Australia]: Klokeid
   1976.
Latin [Indo-European; Italy]: Allen and
   Greenough 1983; Hale and Buck 1966.
Lithuanian [Indo-European; Lithuania]:
   Dambriunas et al. 1966; Ambrazas 1997;
   Mathiassen 1996.
Lomongo [Bantu; Congo]: Hulstaert 1961.
Lulubo [Nilo-Saharan; Sudan]: Andersen 1987.
Makonde [Bantu; Mozambique]: Marcelino
   Liphola p.c.
Maltese [Semitic; Malta]: Aquilina 1965; Borg
   and Azzopardi-Alexandre 1997; Brame 1972;
   Hume 1996.
Manipuri [Sino-Tibetan; India, Myanmar,
   Bangaladesh]: Bhat and Ningomba 1997.
Maranungku [Australian: Australia]: Tryon
   1970; Hayes 1995.
Margyi [Chadic; Nigeria]: Hoffmann 1963.
Mende [Mande; Liberia, Sierra Leone]: Leben
   1978.
Mixtec [Mixtecan; Mexico]: Pike 1948;
   Goldsmith 1990.
Mohawk [Hokan; USA]: Postal 1968; Beatty
   1974; Michelson 1988 and p.c.
Mongolian [Altaic; Mongolia]: Hangin 1968.

Nkore [Bantu; Uganda]: FN in collaboration
   with Robert Poletto.
Norwegian [Germanic; Norway]: Ove Lorentz p.c.
Osage [Siouan; Oklahoma]: Gleason 1955.
Ossetic [Indo-European; Georgia, Russia]: Abaev
   1964; Whitley 1978.
Palauan [Austronesian; Palau]: Josephs 1975;
   Flora 1974.
Polish [Slavic; Poland]: Kenstowicz and
   Kisseberth 1979.
Quechua (Cuzco) [Quechua; Peru]: Bills et al.
   1969; Cusihuamán 1976, 1978.
Saami [Uralic; Sápmi (Norway, Sweden,
   Finland, Russia)]: FN in collaboration with
   Curt Rice and Berit Anne Bals.
Sakha (Yakhut) [Altaic; Russia]: Krueger 1962;
   Nadezhda Vinokurova p.c.
Samoan [Austronesian; Samoa]: Milner 1966.
Serbo-Croatian [Slavic; Yugoslavia] Kenstowicz
   and Kisseberth 1979; Wayles Browne,
   Svetlana Godjevac and Andrea Sims p.c.
Setswana [Bantu; Botswana]: Cole 1955,
   Snyman, Shole and Le Roux 1990.
Shambaa [Bantu; Tanzania]: FN.
Shona [Bantu; Zimbabwe]: FN.
Swati [Bantu; Swaziland]: FN.
Slave [Athapaskan; Canada]. Rice 1989.
Slovak [Slavic; Slovakia]: Kenstowicz 1972;
   Rubach 1993.
Somali [Cushitic; Somalia]: Andrzejewski
   1964; Kenstowicz 1994; Saeed 1993, 1999
Sundanese [Austronesian; Indonesia]: FN.
Syrian Arabic [Semitic; Syria]: Cowell 1964.
Tera [Chadic; Nigeria]: Newman.
Thai [Daic; Thailand]: Halle and Clements 1983.
Tibetan [Sino-Tibetan; Tibet]: FN.
Tiv [Benue-Congo; Nigeria]: Arnott 1964;
   Goldsmith 1976.
Tohono 'O'odham (Papago) [Uto-Aztecan; USA]:
   Saxton 1963, Saxton and Saxton 1969,
   Whitley 1978.
Tonkawa [Coahuiltecan; USA]: Hoijer 1933.
Turkish [Altaic; Turkey] Lees 1961, Foster 1969,
   Halle and Clements 1983.
Ukrainian (Sadžava, Standard) [Slavic; Ukraine]:
   Carlton 1971; Kenstowicz and Kisseberth
   1979; Press and Pugh 1994 (Standard);
   Popova 1972 (Sadžava).

Vata [Kru; Côte d'Ivoire]: Kaye 1982.

Votic [Uralic; Russia]: Ariste 1968.

Warao [Warao; Venezuela] Osborn 1966, Hayes 1995.

Weri [Goilalan: New Guinea]: Boxwell and Boxwell 1966; Hayes 1995.

Wintu [Penutian; USA]: Pitkin 1984.

Woleaian [Austronesia; Micronesia]: Sohn 1975.

Yawelmani [Penutian; USA]: Newman 1944; Kenstowicz and Kisseberth 1979.

Yekhee (Etsako) [Edoid; Nigeria]: Elimelech 1978.

Yiddish [Germanic; Eastern Europe]: Neil Jacobs p.c.

Yoruba [Kwa; Nigeria]: Akinlabi 1984.

# Abbreviations

| | | | |
|---|---|---|---|
| abl | ablative | masc | masculine |
| acc | accusative | ms(c) | millisecond |
| ant | anterior | nas | nasal |
| ATR | advanced tongue root | neut | neuter |
| bk | back | nom | nominative |
| c.g. | constricted glottis | obj | object |
| cl | class | pl | plural |
| cons | consonantal | poss | possessive |
| cont | continuant | pres | present |
| cor | coronal | rd | round |
| dat | dative | sg, sing | singular |
| dB | decibel | s.g. | spread glottis |
| del.rel | delayed release | son | sonorant |
| dim | diminutive | sp | species |
| distr | distributed | strid | strident |
| e.o. | each other | syl | syllabic |
| fem | feminine | tns | tense |
| gen | genitive | tr | transitive |
| hi | high | vcd | voiced |
| Hz | Hertz | vcls | voiceless |
| imp | imperative | voi | voice |
| intr | intransitive | 1 | first person |
| lat | lateral | 2 | second person |
| lo | low | 3 | third person |
| loc | locative | | |