

## TEXTBOOK REVIEW

**The sounds of language:** An introduction to phonetics and phonology. By ELIZABETH C. ZSIGA. Malden, MA: Wiley-Blackwell, 2013. Pp. 492. ISBN 9781405191036. \$55.95.

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INTRODUCTION. *The sounds of language: An introduction to phonetics and phonology*, by Elizabeth Zsiga, is a versatile introductory book intended for courses at the undergraduate and beginning graduate levels. In twenty concisely written chapters, Z introduces the learner to a detailed account of the pertinent concepts in both fields.

The textbook's main strengths include its versatility and range of complexity and sophistication, its inclusion of detailed information about phonetic and phonological phenomena as well as the history of the two fields, and its elegant treatment of the interface.

In this textbook review, we provide a students' perspective from a former undergraduate student who later acted as teaching assistant for the course, and an instructors' perspective from two instructors who taught the course independently at the same institution.

BRIEF SUMMARY. Z has arranged her book into five sections, the first of which is on articulatory phonetics (beginning on p. 1). The first chapter introduces the process of phonation and illustrates the anatomy of the vocal tract with a variety of imaging tools, including MRI, ultrasound, and x-ray. Ch. 2 dives into articulation and the unique set of articulatory characteristics that distinguishes each speech sound. Ch. 3 goes through the phonetic properties of the consonants of the world's languages, with particular detail paid to articulatory characteristics of places and manners of articulation. Ch. 4 details the contrastive features of the vowel space, as well as other dimensions, including voice quality, length, and tone. Ch. 5 discusses more advanced physiology and activation of the articulators, with a focus on gestural scores and low-tech linguo- and palatograms.

The second section addresses topics in acoustic phonetics (beginning on p. 99). Ch. 6 explores the measurements of the physical properties of sound, and also includes a quick note on source-filter theory. Ch. 7 describes the history and current state of acoustic speech analysis, including a thorough explanation of how the physical properties of sound waves appear in digital visualizations. Ch. 8 plays off of the physics taught in Ch. 6 and presents a brief, advanced account of acoustic analysis. Ch. 9 changes focus to the physiology and psychology of perception, and serves as a bridge between acoustic phonetics and segmental phonology, which is the focus of the third section (beginning on p. 186).

The section on segmental phonology continues with Ch. 10, which introduces the fundamentals of phonological analysis, and Ch. 11, which discusses phonological rules and generalizations. Ch. 12 follows up with a discussion of subphonemic analysis. Ch. 13 reviews how phonological theories developed, starting with *The sound pattern of English* (Chomsky & Halle 1968), which leads into Ch. 14's discussion of optimality theory.

The fourth section of this book concerns suprasegmental phonology (beginning on p. 330). Ch. 15 demonstrates syllabic structure and touches on sonority and prosodic hierarchies. Ch. 16 introduces metrical structure and crosslinguistic manifestations of linguistic stress, and leads into a discussion of tone, which is continued in Ch. 17.

Variation and change is the final set of topics covered (beginning on p. 401). Ch. 18 outlines the history of English phonology (and some morphology) and applies previous discussion of phonological rules to historical reconstruction. Ch. 19 introduces dialectal variation in World Englishes and sociolinguistic sources of dialect-internal variation. Ch. 20 wraps up with an overview of some popular psycholinguistic theories of L1 acquisition in comparison to L2 learning.

**STUDENTS' PERSPECTIVE.** Z lays out a general description of how sounds are produced, perceived, and analyzed. She assumes a beginner's understanding of linguistics and begins with a detailed description of the vocal tract and its functions, while using language that is basic enough for a novice to understand, but she also includes and defines enough pertinent vocabulary to allow the reader to gain a solid foundation for further study in the field. The tone that Z sets is friendly and informative, like a teacher who wants to infuse students with as much passion for the topic as knowledge of it. While Z begins to assume a higher level of understanding on the part of the reader as the book progresses, she never loses the easy tone or fails to adequately describe a term or phenomenon.

In the preface to the book, Z first addresses the student, which is interesting to note because most often the instructor is addressed first. This speaks to Z's concern for the students and the teacher-like tone she uses to write the book. She often takes a break from factual prose to add an amusing or instructive simile describing the phenomenon she has just introduced.

For readers with a moderate or low level of interest in the content of the book, Z captures their attention using means other than pure subject matter. She includes all of the information a learner will need in order to engage with technical articles, while presenting it in a way that is fresh and interesting enough to appeal to those who have no intention of pursuing the field further.

As a student of linguistics with rather high interest in the subject, the second author of this review would have read the book with no problem regardless of writing style, visual aids, and so forth. However, Z employs a conversational writing style, using fascinating facts, similes, and a sense of humor to keep the focus of casual learners as well as more passionate students. This style, coupled with the appealing content and visuals, is effective in capturing the attention of students with many different learning styles. She makes the book seem like light reading, while including the right amount of target information to enable a reader to become a competent student of speech science.

Z includes informative tables and clarifying images to complement the prose—for example, an example of an MRI image as it applies to the topic, an image of lip position in a foreign sound, and a table consolidating phonological processes and their concise definitions. There are also 'In focus' textboxes that elaborate on phenomena described in the prose. These textboxes are great for giving students a break from technical information and bringing out interesting facts. They are a relief from more intense reading and offer related tidbits that interface with other fields.

The layout of the book is aesthetically pleasing, including peach-colored tables and figures to break up the text. This eliminates students' common expectation that reading a textbook will be tedious.

At the end of each chapter, after the information has been presented (including aids for clarification), there is a chapter summary with a list capturing the most important points. Review exercises are included to assess and improve the student's understanding. One drawback is that these practices do not include answer keys. This may either frustrate students or, taking a more positive view, encourage them to seek the advice of

their instructors or reread sections of the chapter. Most exercises offer a simple review of the chapter, listing all of the important vocabulary and asking only for answers provided in the preceding chapter. However, there are also some more in-depth exercises that require students to analyze data sets or information on their own. Due to the limitations of the medium, a companion website and supplementary resources are also referenced in order to encourage further exploration.

The chapter summaries may prove useful for students who did not find the time to read the whole chapter or who read it earlier and need a refresher. The review exercises are also invaluable for students to test their own understanding and memory, and they are short enough that most students will avail themselves of this resource. The companion Wiley-Blackwell website (<http://www.wiley.com/go/zsiga>), however, is not likely to be used by the vast majority of students. Very passionate students or those with extra time on their hands may choose to follow up on the online resources, but many simply may not have the time or will not believe them to be important, which is unfortunate, because fascinating things are included.

**INSTRUCTORS' PERSPECTIVE.** The first and third author recently used this textbook in two iterations of a semester-long (fifteen week) required introductory course in phonetics and phonology for linguistics undergraduate students. It is the sole course dedicated to phonetics and phonology offered on a regular basis at the institution, and students from other majors who are required to take multiple linguistics courses may enroll in it as a linguistics elective. The course covers four distinct areas: articulatory phonetics, the physical properties of sounds, introductory phonology, and formal approaches to phonology.

Z's intentional inclusion of chapters at different depths and breadths for each section allows instructors to adapt the use of the text to fit a course schedule by selecting the corresponding number of chapters from each section. Although this text was used for a course covering both phonetics and phonology, we believe that the book could easily be used in institutions in which phonetics and phonology are taught over two terms. Furthermore, the average chapter length is twenty-three pages, allowing instructors to assign a reasonable workload of a chapter per week.

Unlike in previous books used for the course, the in-depth inclusion of both phonetics and phonology in Z's book allow the author to draw connections between the physical and articulatory properties of sounds when referring to phonological processes, natural classes, and phonological analyses. Clear examples of this include the comprehensive descriptions of distinctive features with 'articulatory', 'acoustic', and 'typical natural classes and alternations' explanations for each, throughout Ch. 12.

Z presents a detailed explanation of the technological tools used by professional linguists, ranging from an overview of state-of-the-art imaging techniques (4) to instructions for performing a palatogram (93). A particular focus is placed on the physical underpinnings of acoustic analysis in Chs. 6, 7, and 8. These three chapters provide an introduction to Praat, as well as a thorough introduction to the underlying physical/mathematical algorithms used to perform acoustic analyses. These chapters teach the reader about the technologies used (in the past and present) for analysis of speech and provide the ambitious learner with opportunities to develop a deep, holistic understanding of the intersection of physics and acoustic phonetics.

Examples in the book are initially focused on English, since it is the common language for readers, but Z also uses a wide variety of languages throughout, from different dialects, language families, and geographical regions. She contextualizes data sets

by including the language's country of origin and providing references for the data sets at the end of each chapter.

The review exercises available at the end of each chapter help students hone skills and sharpen their understanding of key concepts. Exercises begin with simple comprehension questions about the chapter, followed by a 'further analysis and discussion' section that requires some higher-order thinking for students to apply the material to novel exercises. Finally, the 'further research' section suggests advanced work for more invested students. These open-ended questions can also be used by instructors to encourage students to look into course-related topics for their term projects. To motivate students to make use of the review exercises, the third author highlighted specific exercises as discussion topics during class sessions.

The online website for the book includes additional exercises for each chapter and links to further online resources. The layout is a bit clunky: each chapter is set up separately, with a Word document for the exercises and another for the online resources. In addition to making it more cumbersome for students to access, this means that one cannot search through all the exercises and resources at once, and that each document needs to be opened separately in order to be used. To encourage students to use these resources, the third author downloaded all documents pertaining to the chapters used in her course and posted the online links, as well as some of the exercises, on the course's learning management system website.

*SUMMARY.* *The sounds of language* provides a comprehensive introduction to the fields of phonetics and phonology, and it is thoughtfully written to engage learners and provide them with both depth and breadth. The book can be used for an introductory course in both fields, but can easily be adapted to courses specific to one or the other. Its versatility also allows instructors to select only the chapters appropriate for a given course, without having to rely on other texts to fill in gaps. Additionally, we believe that it would easily serve as a good resource for learners who are professional linguists or other speech scientists who need to brush up on phonetics and phonology.

#### REFERENCE

CHOMSKY, NOAM, and MORRIS HALLE. 1968. *The sound pattern of English*. Cambridge, MA: MIT Press.

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