

Review

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Wiebke H. Ahlers, *Consonantal sound change in American English: An analysis of clustered sibilants* (Studies in English Language). Cambridge: Cambridge University Press, 2023. Pp. xii + 233. ISBN 9781316512722.

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Scholars who study variation in language have availed themselves of instrumental analysis primarily for vowels until the last two decades. However, as e.g. Kerswill & Wright (1990), Docherty & Foulkes (1999) and Purnell *et al.* (2005) have noted, many consonantal variables require instrumental analyses for accurate assessment. One such variable is the realization of the initial member of /str/ clusters in English, as in *strong* and *string*, which tends to show some retraction and may be realized as [ʃ] in extreme cases. This phenomenon has been examined in several recent studies (e.g. Labov 2001; Baker *et al.* 2011) and is the topic of Wiebke Ahlers' book, *Consonantal Sound Change in American English: An Analysis of Clustered Sibilants*. Whereas earlier examinations had limited scopes, Ahlers broadens the exploration of social constraints on /str/ retraction well beyond any previous study, while also providing detailed and proficient acoustic and statistical analyses.

Ahlers chose an ideal site for her study. Austin, Texas, has three well-defined ethnic groups of long standing in the community – White Anglos, African Americans and Latinos. In fact, Austin has attracted other sociolinguistic projects (Harris 1969; McDowell & McRae 1972) that also took advantage of the three-way ethnic divide. This location provided her with a unique opportunity to build ethnicity into her analyses. Austin has changed greatly since those earlier studies were conducted, having grown explosively, as Ahlers mentions on page 103. As she also notes (pp. 105–6), the Latino component of the city has expanded dramatically in comparison to the White Anglo and African American populations.

The book, however, reads like a dissertation. In fact, it reproduces Ahlers' (2020) dissertation nearly verbatim, with only the lightest revision and editing. Nearly half of the book consists of background discussion, often covering quite elementary concepts, and much of this discussion could have been covered far more concisely or, in many cases, omitted altogether because it is related only tangentially to the investigation of /str/ realization. For example, she informs readers about consonants, 'The airflow can be obstructed in multiple ways, usually referred to as the manner of articulation' (p. 53), and then proceeds to recount the differences among stops, fricatives, approximants and nasals. On pages 38–40, she goes into detail explaining Bell's (1984) Audience Design model, yet Audience Design plays no role in the analysis of

her Austin data in later chapters. The empirical study itself is excellent, and readers may wish to skip over the lengthy background chapters.

The first chapter (pp. 1–49), a wide-ranging review of sociolinguistic theory and practice, epitomizes this tendency in the book. It begins by introducing the /str/ variable that is the focus of the empirical part of the book. It then delves into defining variationism, reviewing the problems to be addressed in studies of linguistic changes as outlined by Weinreich *et al.* (1968), and discussing the independent variables of age (including the apparent time construct), gender, social class and its relationship with educational attainment, ethnicity and region. The section on ethnicity contains subsections on Latino and African American Englishes and their interactions. Most, if not all, of this information is standard sociolinguistic lore. Then a section on intra-speaker variation follows, in which Ahlers discusses the Labovian treatment of speaking style, the Audience Design model of Bell (1984) and a few recent approaches to sociolinguistic identity. A section on meaning, divided into discussions of indexicality and salience, falls next. The treatment of indexicality begins with Labov's (1972) model of the life of a variable as consisting of indicator, marker and stereotype stages, and then moves on to Silverstein's (2003) model of orders of indexicality, with some discussion of how the first and second orders have been applied in sociolinguistics. The chapter as a whole would make a fine reading assignment for a sociolinguistics course. However, not all of the topics covered in it appear in the later chapters on the analysis of /str/ variation.

Chapter 2 covers phonetic and phonological issues related to sibilants (pp. 50–71). The chapter covers a great deal of ground as it veers among topics that are more germane or less so to /str/ analysis. There is a section on the history of the phoneme concept and then one on the phonetics of the three kinds of sounds present in /str/ clusters. The chapter proceeds thence to a section on acoustic phonetics that begins with basic acoustic concepts and source filter theory – both of which are better suited for a phonetics textbook than for the study at hand – but then finds its way to techniques for measuring frication noise, which are very much relevant to the study. Ahlers notes that her empirical analysis relies heavily on just one of these techniques, the center of gravity (CoG) metric, and gives some explanation of why it is superior. She then explores exemplar theory and provides quite a good overview of it. Exemplar theory also appears prominently in chapter 3. However, it garners only a few brief mentions in the empirical part of the book and could have been developed more there in order to justify its place in the early chapters.

The remainder of the chapter covers assimilation and adds a short conclusion. The discussion of assimilation focuses in large part on abstract phonological approaches, leading up to long-distance assimilation, which, as Ahlers states (p. 70), one might consider necessary for /r/ to affect the realization of /s/ in an /str/ cluster. It would seem, however, that phonetic accounts of anticipatory gestural movements would offer a more facile explanation than abstract accounts could. The issue of how /r/ could render the preceding /s/ more [ʃ]-like, irrespective of the intervening /t/, brings up another lacuna in this chapter. On pages 56–7, Ahlers discusses the production of

/r/ in American English. She cites only Ladefoged & Maddieson (1996) on this matter, though. The reliance on this one source leads Ahlers to emphasize the retroflex /r/ variant and to give the ‘bunched /r/’, with its palatal constriction, a briefer mention. (She does note later, on p. 86, that Labov 2001 referred to a palatal quality of /r/.) Various studies that have investigated American English /r/ closely, such as Delattre & Freeman (1968), Espy-Wilson *et al.* (2000) and Mielke *et al.* (2016), have shown that the bunched /r/ is clearly the predominant type in American English. That fact, in turn, would explain why /s/ is so prone to retraction when it falls before /r/, in that anticipation of the palatal constriction of bunched /r/ pulls [s] backward.

Chapter 3 is dedicated to sound change (pp. 72–97). Sections 3.1 and 3.2, on the origin of sound changes, primarily cover phonetic and related approaches to the subject. Ahlers provides a succinct and useful overview of various models. Section 3.3 shifts to the propagation of change, with discussion of the relative explanatory power of the Neogrammarian hypothesis of exceptionless, phonetically conditioned sound change and of the alternative lexical diffusion hypothesis. Ahlers may accept too uncritically Tamminga’s (2014) interpretation of the relationship between lexical diffusion and exemplar theory. The remainder of the chapter thoroughly reviews past research on retraction of [s] in /str/ clusters and lists hypotheses that Ahlers’ investigation of /str/ will test. Of the models of sound change covered in chapter 3, only the issue of lexical effects versus phonetic gradualness garners much attention in later chapters.

In chapter 4 (pp. 98–119), the empirical study that is the primary topic of the book first emerges. The main part of this chapter is a description of the study community (Austin) and of the sampling and interviewing techniques. Ahlers provides a good deal of information about Austin. Perhaps the most important recent development is that the African American community in the city is being squeezed as the Latino population has expanded dramatically and is filtering into traditionally African American neighborhoods. The interview protocol included some ingenious methods for eliciting /str/ and similar consonant clusters, such as having subjects read a translated Swedish children’s book that contained the clusters in question repeatedly. Near the end of the chapter, Ahlers adds a short description of how she obtained CoG readings.

Chapter 5 is the heart of the empirical study, and here (pp. 120–94) the study shines. The chapter begins with a detailed examination of linguistic constraints that influence /str/ production. There is a careful analysis of CoG patterns for /s/ and /ʃ/, as well as the distributions of CoG values for /str/ and similar consonant clusters. CoG for /str/ lies between that of /s/ and that of /ʃ/, as expected, but CoG for /st/, /sk/ and /skr/ was close to that of /s/; /sp/ and /spr/ lacked sufficient data for firm conclusions. Ahlers then examined lexical factors and found some apparent differences among the most common words. More incisively, her subjects fell into three groups: those with little /str/ retraction, those with categorical /str/ retraction, and a transitional group who showed detectable lexical differences that were correlated with the frequency of a word, with words that appear more frequently showing greater degrees of retraction. This finding is important because speakers who represent transitional stages in a sound change can reveal what factors may be driving the change.

Chapter 5 then moves to social factors before combining the linguistic and social factors in three numerical analyses. The analyses of social factors showed no clear effects for educational level and ambiguous results for gender. However, younger speakers showed more /str/ retraction than older speakers, and African Americans and Latinos appeared to be leading White Anglos in the retraction. For speaking style, a picture naming task, surprisingly, yielded more retraction than reading or conversation. In combining linguistic and social factors, random tree analysis showed that individual variation among speakers was the most important factor, followed by lexical differences. Word frequency, ethnicity and style ranked successively lower. Mixed-effects regression and random forest analyses produced similar results, but also showed a small effect for gender. At the end is a section on subjects' evaluation of /str/ retraction in which a lack of awareness of the shift among most subjects materializes. The phenomenon is clearly 'below the level of social awareness', as Labov (1972: 178) described linguistic indicators.

The final two chapters largely summarize the findings from chapter 5 ('Discussion', pp. 195–207, and 'Conclusion', pp. 208–11). Ahlers reiterates some of the key points that her study uncovered. She notes that the reason lexical frequency affects /str/ retraction only for some subjects is that those who have the highest degrees of retraction 'have already surpassed that state where frequency matters' (p. 199). This observation could be seen as a corollary of the S-curve model of a linguistic change, in which a change starts slowly, undergoes a period of acceleration while the speech community shows considerable variation, and then levels off as it nears completion. She discusses the unexpectedly small effect of gender in the results and concludes that the real pattern is that White males lag behind everyone else. She also explores why African Americans and Latinos group together in leading /str/ retraction and suggests that it is due to their living in many of the same neighborhoods.

At the end of the book, a short glossary and a rather brief index flank the list of references. The glossary would be more appropriate for a textbook than for a research monograph. As for the index, it seems minimal. It focuses on terminology, but some concepts mentioned in the book, such as Quantal Theory, are missing. Another gap in the index is the absence of the names of authors that Ahlers cites elsewhere in the book.

The book as a whole would have benefitted from thorough editing. Most of the problems are minor, but at times, they detract from the message. Most problematic are some of the graphs and the descriptions of them in chapter 5. On pages 159, 167 and 172, the text refers to different colors of symbols in figures; however, the book is printed in black and white. (The colors appeared in the electronic version of Ahlers' dissertation.) In many graphs, especially figures 5.3–5.5 and 5.21, but also 5.7, 5.15, 5.18–5.20 and 5.22–5.23, some of the data points and lines are faint or even invisible. This problem was due to the fact that the graphs were created in color and some of the colors translated poorly to black-and-white print. Modern statistical tools that generate graphs, including the one that Ahlers used, R, commonly use color in their default mode, which has led many scholars to neglect the art of making effective, readable, black-and-white graphs.

Minor stylistic and typographical problems are more frequent than they should be in the book. All or nearly all of these errors can be found in Ahlers (2020) as well. For instance, on page 153, we read, regarding CoG, that ‘/s/ is generally pronounced at 4,000 Hz and /ʃ/ generally at 8,000 Hz’ – when, in fact, it is [ʃ] that has the lower CoG. There are cases of unidiomatic diction: on page 124, ‘The boxplot in Figure 5.2 further visualizes ...’ should be ‘The boxplot in Figure 5.2 further illustrates ...’, and on page 130 ‘He describes that ...’ should be ‘He notes that ...’. Examples of other mistakes are a reference to Edward Sapir as ‘she’ (p. 52) and an omission of *some* in the line ‘that [some] participants spoke ... while others ...’ (p. 205). These examples are not isolated.

Consonantal Sound Change in American English: An Analysis of Clustered Sibilants is the sociolinguistically most sophisticated analysis of /str/ retraction that has yet appeared. The empirical part of the study offers adroit analyses of both linguistic and social constraints on this sound change, using the best current statistical tools, and then welds them together skillfully. Even so, the monograph is like two books in one. The first three chapters seem more like manuals of different areas of linguistics. Considered alone, they serve as survey papers on those topics. Nevertheless, although they cover each of these topics with some thoroughness, they far exceed what is needed for the study of /str/ that Ahlers conducted. Citations of previous studies covering these topics within chapters 4–6 would have sufficed in most cases. The lasting importance of the book lies in those chapters, which furnish new information about both /str/ retraction and broader linguistic patterning.

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