data in the form of page numbers cannot be directly compared, in that some grammars also contain dictionaries and (perhaps many) texts; and such matters as density of style, amount of detail, publishers' constraints, and page layout play a role. On closer inspection it appears that the font and line spacing of the book under review mislead us: the letters in the book are very small, compared with those used in other Mouton grammars.

In short, descriptions of creole grammars—including this one—do not necessarily seem to be particularly brief. This grammar contains new details and observations on almost every page, even for readers who have worked on the language. It also combines features from structuralist traditions with more functionalist approaches: for instance, in the chapter on information structure, the authors describe how pragmatic functions like emphasis, focus, and new information are marked in the grammar. Saramaccan uses adverbs, particles, and positioning of elements as strategies. Especially striking and innovative are the many facts about exceptions to rules. For example, third-person object clitics may merge with some vowel-final verbs, but not with others (95–96).

The authors wisely stay away from discussions about the nature of creoles in this book, since such discussions belong elsewhere and not in a description. They do not take a stance in theoretical debates on some topics like verb serialization and verb movement.

The authors should be praised for their achievement, especially taking into account their fieldwork with exiled speakers. The only major drawback of the book is the price. Libraries should of course order it, but few linguists may be able afford it for their private libraries.

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The sonority controversy. Ed. by STEVE PARKER. (Phonology and phonetics 18.) Berlin: De Gruyter Mouton, 2012. Pp. 487. ISBN 9783110261516. $154 (Hb).

<div align="right">Reviewed by BRETT HYDE, *Washington University*</div>

The sonority controversy is a collection of twelve articles, each touching on sonority in some way. While a few of the articles use sonority simply as a background to explore other issues, most examine issues that have been central to the discussion of sonority, or to the types of phenomena that sonority has been used to address, over the last several years.

Sonority is typically taken to be a scalar feature ordering the various types of segments with respect to loudness or intensity. Vowels are the most sonorous segments, and stops are the least sonorous, with glides, liquids, nasals, and fricatives falling in between.

    (1) Sonority scale: vowels > glides > liquids > nasals > fricatives > stops

Sonority has been employed most frequently in the analysis of restrictions on segment sequences within the syllable, being incorporated into two principles: the sonority sequencing principle

(Steriade 1982, Selkirk 1984, Clements 1990), which requires that sonority decline from the nucleus of the syllable toward both of its edges, and the sonority dispersion principle (Clements 1990), which requires the decline in sonority from the nucleus through the onset to be relatively steep and the decline from the nucleus through the coda to be relatively shallow. The sonority scale has been utilized in the analysis of segment sequences that straddle syllable boundaries as well. It is the key component of the syllable contact law (Murray & Vennemann 1983, Vennemann 1988), which requires a decline in sonority from the right edge of the first syllable to the left edge of the second. Sonority has also often been employed in the analysis of stress patterns that are sensitive to vowel quality (Kenstowicz 1996, de Lacy 2002, 2004).

Although *The sonority controversy* is divided into five sections, the contributions are not evenly distributed among them. Half of the contributions are assigned to the first section, 'Sonority and phonotactics', and all but one or two of the remaining six might have reasonably been assigned to this section as well. The nearly exclusive focus on phonotactics is perhaps the collection's most significant shortcoming. As mentioned above, for example, there has been a notable amount of work on the role of vowel sonority in constructing certain types of stress patterns, but only the contribution from MATTHEW GORDON, EDITA GHUSHCHYAN, BRADLEY McDONNELL, DAISY ROSENBLUM, and PATRICIA A. SHAW, 'Sonority and central vowels: A cross-linguistic phonetic study', addresses the role of sonority in this context. Three contributions, including the phonetic study just mentioned, are assigned to the second section, 'Sonority and phonetics'. The remaining three sections, 'Sonority and language acquisition', 'Sonority and sign language', and 'Sonority and computational modeling', each contain a single paper.

As might be expected, given the success of sonority-based accounts in the analysis of phonotactic patterns, most of the contributions in the 'Sonority and phonotactics' section present a positive view of sonority's key role. For example, KAREN BAERTSCH's chapter, 'Sonority and sonority-based relationships within American English monosyllabic words', presents an approach to syllable structure within the context of optimality theory. The analysis modifies Prince and Smolensky's (1993) peak-and-margin hierarchies account in a way that takes advantage of Baertsch's (2002) split-margin approach to syllable structure. The sonority scale is used to formulate a set of universally ranked constraints for each position in the syllable, and the constraints are then locally conjoined to form a hierarchy of preferences for all syllables that might be formed using these positions. The presentation is a little quick, but the key principles are mostly familiar, and Baertsch does a nice job, in a relatively short space, describing how they work together.

ANDRÁS CSER's 'The role of sonority in the phonology of Latin' and STEVE PARKER's 'Sonority distance vs. sonority dispersion—a typological survey' present similarly positive views. Cser's article is primarily descriptive, illustrating how Latin conforms to the sonority sequencing principle and the syllable contact law with very few exceptions. The exceptions are particularly interesting in that those allowed for nonnasal sonorants and those allowed for other segments seem to have opposing characteristics. Parker's article shows that the sonority sequencing principle and the sonority dispersion principle have conflicting preferences with respect to onset clusters and that these preferences can be seen in two types of languages, one that prefers the second member of a cluster to be a glide and one that prefers the second member to be a liquid.

The evaluations of sonority's key role in phonotactic analyses are not all positive, however. In 'Is the sonority sequencing principle an epiphenomenon?', ERIC HENKE, ELLEN M. KAISSE, and RICHARD WRIGHT argue that the notion of 'auditory cue robustness' provides an alternative set of principles that does the same work as sonority with fewer exceptions. Auditory cue robustness is contingent on several factors, including temporal distribution of cues, modulation, redundancy, and loudness. Since the last mentioned is typically taken to be the basis for the sonority scale and the principles that refer to it, however, the case against sonority's key role does not really seem to be that it is merely an epiphenomenon. Instead, the case seems to be one for a reduced role for sonority in the overall scheme, where sonority is simply one of several interacting factors. Indeed, the strongest support for the auditory cue robustness approach comes from phenomena, such as the behavior of sibilants, that fall through the cracks under a traditional sonority approach.

In 'Sonority intuitions are provided by the lexicon', RUBEN VAN DE VIJVER and DINAH BAER-HENNEY question the notion that the sonority scale is an innate feature of the grammar. They

present the results of three studies focused on onset clusters in German: a nonce-form study, a corpus frequency study, and a learning simulation. Supporting previous findings by Daland and colleagues (2011), they find that intuitions about sonority-like restrictions on syllable structure can be gained from the lexicon, as long as the lexicon is structured in terms of distinctive features.

The final contribution in the 'Sonority and phonotactics' section is less about sonority in particular than it is about the implementation of markedness scales generally. In 'Sonority variation in stochastic optimality theory: Implications for markedness hierarchies', JENNIFER L. SMITH and ELLIOTT MORETON use sonority as a context to examine the question of whether markedness hierarchies should be formalized as scale-partition constraint families, where single constraints referring to each point in a hierarchy have a fixed, universal ranking, or as stringency constraint families, where individual constraints refer to a subset of the points in a hierarchy and ranking is not universal.

While none of the three papers in the 'Sonority and phonetics' section seems to be presented with the aim of undermining sonority-based analyses, each raises some important questions. In 'Sonority and central vowels: A cross-linguistic phonetic study', Gordon, Ghushchyan, McDonnell, Rosenblum, and Shaw hope to determine the acoustic basis for the lower position of schwa in the sonority scale relative to peripheral vowels. While they find that schwa can be distinguished by at least one of the characteristics measured (duration, maximum intensity, acoustic energy, and perceptual energy) in each of the five languages examined, it appears that no single characteristic makes the correct distinction in all languages. They conclude that there may be no single acoustic measure that provides the basis for the vocalic sonority scale.

Much like Henke, Kaisse, and Wright's contribution, MICHAEL PROCTOR and RACHEL WALKER's 'Articulatory bases of sonority in English liquids' presents a picture in which sonority (interpreted as loudness) plays a reduced, more interactive role. Proctor and Walker's contribution, however, emphasizes the role of articulatory properties, rather than perceptual properties. Based on an rtMRI study of the articulation of /r/ and /l/ in various contexts, they find that the tongue-body gestures of /l/ are relatively more compatible with a wide range of vowels than those of /r/. This discrepancy, they argue, provides a better account of the greater restrictions on English rhymes containing /r/ relative to rhymes containing /l/ than differences in loudness. BRETT MILLER's contribution, 'Sonority and the larynx', can be seen as raising a complementary issue: the possibility of the sonority scale itself being decomposed into two, more primitive, scales, one based on sound source and a second based on aperture.

As mentioned above, the final three sections each contain a single contribution. OUTI BAT-EL's paper, 'The sonority dispersion principle in the acquisition of Hebrew word final codas', is the contribution in the 'Sonority and acquisition' section. It is a nuanced account of a trajectory in acquisition that is unexpected in light of the sonority dispersion principle. Under the sonority dispersion principle, sonorant codas are less marked than obstruent codas and are expected to appear first in production. It turns out, however, that in Hebrew, as well as many other languages, obstruent codas are produced first. Bat-El argues that the prevalence of sonorant codas in attempted targets supports the role of the sonority dispersion principle, and that the early appearance of obstruent codas in production can be explained by assuming that codas are acquired in two stages. When the coda position is first acquired, acquisition is focused on the new position itself, and children fill this new position in production with the obstruents that they have already learned in connection with onsets. Once the coda position itself is learned, the expected preference for sonorants emerges.

TOMMI JANTUNEN's 'Acceleration peaks and sonority in Finnish Sign Language syllables' makes up the 'Sonority and sign language' section. Jantunen finds that since signed language syllables may contain no acceleration peaks or multiple acceleration peaks, acceleration peaks are not clear candidates for signed language sonority. The 'Sonority and computational modeling' section contains PAUL TUPPER and MICHAEL FRY's paper, 'Sonority and syllabification in a connectionist network: An analysis of BrbrNet'. They identify some problematic cases for which the original version of BrbrNet (Legendre et al. 2006) generates incorrect parses. They propose a different set of parameters and provide a proof demonstrating that the new parameters produce the correct parsing in all cases.

While one might wish for greater exploration of sonority's role in phenomena other than phonotactic restrictions, *The sonority controversy* is overall a very nice collection. It suffers from problems that seem common to collections—not enough space devoted to analyses that would benefit from greater development and exemplification, too much space devoted to points that could be made much more quickly, relative lack of direct contact between the views expressed in the different articles—but the variety of viewpoints expressed and the diversity of particular interests explored ensures that *The sonority controversy* will appeal to a wide range of researchers. Its papers will be of value to researchers interested in, for example, optimality theory, acoustic phonetics, articulatory phonetics, speech perception, language acquisition, computational modeling, sign language, markedness, and syllable structure. On the whole, the collection paints the picture of a lively and fruitful debate in a key area of investigation. It is well worth reading.

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The morphology and phonology of exponence. Ed. by JOCHEN TROMMER. (Oxford studies in theoretical linguistics 41.) Oxford: Oxford University Press, 2012. Pp. xvi, 592. ISBN 9780199573738. $55.

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This book brings together a number of articles about how morphosyntactic feature bundles get turned into things (un)pronounceable. The book begins with an excellent overview by the editor,