Handbook of the syllable

Edited by Charles E. Cairns and Eric Raimy


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Summary

Why is a book like this needed? The syllable, for all its history and intuitive existence, remains an entity with fuzzy borders at best, with some, most notably Chomsky and Halle (1968), not finding it a necessary unit at all. Other volumes, noted below, have dealt extensively with the syllable within a certain theoretical framework (Optimality Theory), but have not provided a broader overview of arguments for and against the very existence of the syllable. Furthermore, as the volume editors note, a crucial question is: what does a syllable do?

One thing that strikes the casual peruser of the Table of Contents is the broad range of topics, more than the expected purely phonological papers, reflecting current trends such as the increasing use of experimental phonology. The seventeen papers are divided into topical sections, and five of the six sections have to do with "performance" factors rather than explicitly phonological ones. Thus, after an Introduction and five papers relating to "The Syllable in Grammar," we find all the subsequent sections titled "The Syllable in Performance" with subtitles of "Song and Metrics," "Speech Production and Articulation," "Speech Perception and Experimental Manipulation," "Orthography," and "Diachrony," the last two sections consisting of only one paper each. As usual in a review of a volume of collected papers, it is impossible to do justice to each individual contribution, but the following gives a brief synopsis of each.

The Introduction, by Charles Cairns and Eric Raimy, reviews the historical difficulty in precisely defining the syllable and maintains that the variety of approaches in this volume (phonetics, phonology, experimental psycholinguistics, etc.) all have distinct contributions to make to the study of the syllable, and therefore do have something to say to each other. There is a deliberate effort to focus in the following chapters on phenomena that are explained by reference to the syllable. Theory is referred to copiously, of course, but the aim is to have data drive the theory. C&R specifically contrast this with the aims of van der Hulst and Ritter (1999) which aimed for a coherent, Optimality Theory-based phonological account of syllabic phenomena (as do also Féry and van de Vijver 2003). The main prize of this Introduction is a fascinating review of the history of the syllable, making clear that linguists have had "a tendency to keep reinventing the
wheel.” Cairns and Raimy also give adequate, though somewhat uneven, summaries of the chapters to follow.

The major section on “The Syllable in Grammar” begins with Chapter Two, “Compensatory Lengthening,” by Paul Kiparsky. He notes that classic parallel Optimality Theory (OT) cannot derive cases of synchronic compensatory lengthening in Finnish and Samothracian Greek, since these languages exhibit two different syllabification patterns. He proposes a detailed Stratal OT account for these, which preserves the key insight in the traditional autosegmental account of compensatory lengthening. He also demonstrates that OT plus transderivational constraints such as sympathy or O-O constraints are inadequate to account for the patterns of these languages. Kiparsky here assumes traditional syllables, but the paper is more a demonstration of the shortcomings of classical OT and the superiority of Stratal OT than any insight on the nature of syllables.

Chapter Three, “On the Relationship between Codas and Onset Clusters,” by Stuart Davis and Karen Baertsch, maintains that there is a close relationship between C2 of an onset cluster and the consonant of the coda. This is formalized in the “split margin approach” to the syllable, in which both the second consonant of the coda and the coda are labeled M2 and are available as objects of constraint hierarchies, particularly relating to relative sonority. It formally accounts for the implicational universal that if complex onsets occur in a language, then codas do as well. Syllable restrictions of Campidanian Sardinian and Bamana (Bambara) are presented as case studies, as well as applying it to Dorsey’s Law of Winnebago. Chapter Three, “On the Relationship between Codas and Onset Clusters,” by Stuart Davis and Karen Baertsch, maintains that there is a close relationship between C2 of an onset cluster and the consonant of the coda. This is formalized in the “split margin approach” to the syllable, in which both the second consonant of the coda and the coda are labeled M2 and are available as objects of constraint hierarchies, particularly relating to relative sonority. It formally accounts for the implicational universal that if complex onsets occur in a language, then codas do as well. Syllable restrictions of Campidanian Sardinian and Bamana (Bambara) are presented as case studies, as well as applying it to Dorsey’s Law of Winnebago.

Chapter Four, “The CVX Theory of Syllable Structure,” by San Duanmu, proposes that CVX is the maximal syllable in all languages. He gets around such apparent counterexamples as “texts” [tɛkssts] by proposing that not every consonant is syllabified. For example, most English word-final consonant clusters end in [t, d, s, z, θ], and these are attributable to the morphology (suffixes, in this case), and pronounced, even though not in a syllable. He proposes explanations for other apparent counterexamples as well. Though he points out a number of statistical patterns that are interesting, there is not an airtight connection between these and the CVX theory, and so it has the flavor of proposing ad hoc solutions to an inherently implausible theory.

Chapter Five, “The Syllable as Delimitation of the Base for Reduplication,” by Jason Haugen, has a clear goal: to show that the syllable is the limit for reduplication in some languages, and therefore must exist as a phonological constituent. Hiaki (Yaqi), for example, in one of its reduplication patterns, reduplicates a single syllable of the base, either CV or CVC, accountable by the syllable but not a templatic reduplication morpheme. Data from Yapese and Mayo are also analyzed, and implications for various theories of reduplication (Precedence Based Phonology
and Morphological Doubling Theory) are explored. Any of these must recognize a boundary between the first and second syllables of the stem.

Chapter Six, “Geminates: Heavy or Long?” by Catherine Ringen and Robert Vago, argues for the “long” interpretation of underived geminates (contra the inherently heavy view of geminates of the syllable weight analysis of classical moraic theory). The criterion for heavy vs. light syllable is first based on stress patterns of several languages briefly examined, but they then adduce evidence from epenthesis, metathesis, and other segmental processes. Geminates can be light or heavy in this view. They thus propose a universal structure for all geminates, as follows, with a unit of the melodic tier linked to two units on the timing tier:

\[
\begin{array}{c}
\text{C} \\
\alpha \\
\text{C}
\end{array}
\]

The section on “The Syllable in Performance: Song and Metrics” contains the very interesting Chapter Seven, “Singing in Tashlhiyt Berber, a Language that Allows Vowel-Less Syllables,” by François Dell. Dell introduces a syllable-to-note (“text to tune”) mapping notation similar to, but not identical with, autosegmental representation. Tashlhiyt “vowel-less syllables” often have an intrusive schwa between consonants, and these, although playing no part in the phonology, come into full play as melody-carriers in song. Intriguingly, he shows that French also does the same. However, the schwas are not inserted everywhere, but only in certain positions dictated by specific syllable structures. Melismas (more than one note sung on one syllable) occur in both languages.

The section on “The Syllable in Performance: Speech Production and Articulation,” begins with Chapter Eight, “The Role of the Syllable in Speech Production in American English: A Fresh Consideration of the Evidence,” by Stefanie Shattuck-Hufnagel. She briefly reviews several lines of evidence for the syllable, and argues that other structures can account for this evidence. She especially focuses on the concept of syllable as a unit of production in English, but warns that each language must be taken on its own merits.

Chapter Nine, “Do Syllables Exist? Psycholinguistic Evidence for the Retrieval of Syllabic Units in Speech Production,” by Joana Cholin, answers the title question in the affirmative. She presents experimental evidence of syllable-frequency effects in Dutch and English, e.g. that high-frequency syllables are produced faster than low-frequency ones, and so argues for syllables as stored motor units in speech production.

Chapter Ten, “Phonological Encoding in Healthy Aging: Electrophysiological Evidence,” by Yael Neumann, Loraine Obler, Hilary Gomes, and Valerie Shafer, reports on an experiment that asked older and younger subjects (1) whether a pictured object ended with /n/ or /r/ and (2) whether the object had one or two syllables. They used an EEG to detect the readiness to push a button even before the button was pushed. The older subjects had slower response times for both tasks, but the syllabic task (2) was delayed more than the segmental task (1). The larger question raised is whether this connects to lexical word retrieval impairment among older people. This experiment did not directly address that, but did suggest further investigations that might.
This was an interesting study, though it seemed to treat syllables as a marginal rather than central topic.

The Section “The Syllable in Performance: Speech Perception and Experimental Manipulation,” begins with Chapter Eleven, “The Impact of Experimental Tasks on Syllabification Judgments: A Case Study of Russian,” by Marie Hélène Côté and Viktor Kharlamov, raises the pertinent question of how the choice of experimental procedures affects the results. Six procedures were briefly reviewed, with four factors listed which potentially lead to different syllabification judgments even with identical stimuli. Five procedures were done for Russian. The syllable repetition task yielded the most different results, and other procedures gave greater or lesser comparability. This is recommended reading for all researchers who assume that what one measures applies to the question one is asking.

Chapter Twelve, “Syllables in Speech Processing: Evidence from Perceptual Epenthesis,” by Andries Coetzee, reviews evidence from speech production and perception supporting the syllable. He reports on three experiments, showing that American English listeners are so sensitive to syllable-based allophonic distribution that they will perceive segments which are not there. For example, the acoustic signal [spʰɪka] is reported as [səpʰɪka], since English aspirated voiceless stops occur only syllable-initially.

Chapter Thirteen, “Anglophone Perceptions of Arabic Syllabic Structure,” by Azra Ali, Michael Ingleby, and David Peebles, gives background on the McGurk effect, then reports on experiments with Arabic stimuli with both native Arabic and English speakers. Arabic speakers showed a preference for interpreting these as purely CV structures, while English speakers interpreted the same data as having codas as well, showing that speakers of different languages have different internalized syllable structures.

Chapter Fourteen, “The Role of Syllable Structure: The case of Russian-Speaking Children with SLI,” by Darya Kavitskaya and Maria Babyonyshev, reports on a number of well-done studies with children with Specific Language Impairment (SLI), a disorder that affects language acquisition, specifically phonological memory, though nonverbal IQ is normal. Pseudo-words were given to SLI children, varying by length and syllable complexity, and the children repeated them back as accurately as possible. Results showed that syllable structure and complexity made a difference, not just the number of consonants. Furthermore, there was a gradient result, not a clear distinction between CV and all other types.

Chapter Fifteen, “Syllable Markedness and Misperception: It’s a Two-Way Street,” by Iris Berent, Tracy Lennertz, and Paul Smolensky, reported on several experiments in which, for example, Russian words like lbif were interpreted as disyllabic by English speakers but monosyllabic by Russian speakers. That is, marked onsets with sonority plateaus or falls were more likely to be misperceived. These results argue that markedness restrictions on syllables are active in a speaker’s mental grammar, not merely relics of language change, language frequency, or mechanics of perception and articulation.

Gnanadesikan. (She notes that many writing systems have proved to be more durable than phonological theories!) Syllabaries from Mayan, Cypriot, Linear B, Cherokee, and others are presented; the latter two are especially interesting in that they provide a special status to /s/, and others provide clear distinctions between onset and rhymes. Thus, syllabaries provide good evidence for not only the existence of the syllable, but details of its structure as well. She speculates that Westerners have neglected the syllable in linguistics because they have been educated in an alphabetic system.

Finally, the section “The Syllable in Performance: Diachrony” also consists of the single Chapter Seventeen, “Diachronic Phonotactic Development in Latin: The Work of Syllable Structure or Linear Sequence?” by Ranjan Sen. In it, Sen examines the development of Latin consonants in light of two hypotheses: a syllable-based approach (which is more phonological), and a linear segmental approach (which depends on phonetic cues). Voice assimilation can be handled by either, but place, manner, and nasality assimilations are more successfully handled by the linear segmental approach. However, stop-sonorant sequences (i.e. *po.plo vs. pop.li.kos) and their reflexes showed that syllables did play a role in the development of Latin, though the role was quite minor compared to linear segmental factors.

**Evaluation**

In a book called “Handbook of the Syllable,” one would expect to find a review of evidence relating to the existence of such a linguistic constituent as the syllable, perhaps a summary of the history of what linguists have thought about it, and arguments for and against a particular structure of the syllable. One may not expect the absolute latest research, but would expect many references to solid, perhaps even “classical,” research that bears on the topic. This volume is a rich resource for all these, and more.

Besides the main arguments of each paper, one can learn much about the literature on syllable patterns in general, e.g. a common ban in English on the same consonant flanking a vowel if there is an onset cluster, thus *klull is illicit, but lull is fine. For those seeking more background, quite a lot of further references are found in the papers.

The objectives of the authors vary. Some authors provide evidence for the existence of the syllable in one way or another (Haugen, Cholin, Coatzee, Kavitskaya/Babyonychev, Gnanadesikan). Others provide explicit proposals on the structure of the syllable (Davis/Baertsch, Duanmu, and Ringen/Vago). Others assume the syllable as a useful part of their analysis (Kiparsky, Dell, Neumann/Obler/Gomes/Shafer) and thus indirectly support the syllable. Two (Shattuck-Hufnagel and Sen) question the relevance of the syllable in their specific studies. Finally, the Côté/Kharlamov paper, uniquely and importantly, raised the quite significant question of how experimental procedure and the specific tasks assigned affect the results obtained.

There is little that unifies these papers but their common concern about “the syllable.” Several assert that the syllable is well-established, but it seems an open question at what phonological or even phonetic level a syllable structure is constructed. Sonority as a component of licit syllable structure was mentioned by several, and it is unfortunate that only Brent, Lennertz, and Smolensky
seemed aware of Parker’s important 2002 dissertation on the subject. Fromkin’s (1971) study of speech errors is invoked by several authors, most of whom (except Shattuck-Hufnagel) affirm the original claim, that these give evidence of syllable structure.

Most of the papers are well-reasoned, and supported by appropriate language data. (Even Duanmu’s CVX theory paper, which seems to me quite artificial, has some account of counterexamples.)

The volume is a beautifully bound hardback, generally well-edited (most of the few errors I noticed were in the Introduction). Useful Indices of Languages, Authors, and Subjects are included.

References


