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BOOK REVIEW

Brenda Nicodemus, *Prosodic Markers and Utterance Boundaries in American Sign Language Interpretation*. Washington, DC: Gallaudet University Press, 2009. € 52.00 / \$ 65.00 (162 pages) ISBN 978-1-56368-412-8.

Reviewed by Svetlana Dachkovsky (Sign Language Research Laboratory, University of Haifa)

Brenda Nicodemus's book *Prosodic Markers and Utterance Boundaries in American Sign Language Interpretation* (henceforth *PM*) presents a large-scale investigation of prosodic parsing and recognition by deaf subjects of utterance boundaries in the signing of American Sign Language (ASL) interpreters. As a longtime professional interpreter, the author of the book reports her fascination with the role of prosody in mediating language barriers between the Deaf and hearing populations, and, at the same time, her perplexity at the absence of studies on this subject. Only a relatively recent study by Winston and Monikowski (2003) on topic boundaries in interpreted texts has alleviated the silence on this issue. Nicodemus sets out to fill this gap: she devises an experiment to check the repertoire of prosodic features that cue sentence boundaries in ASL interpretation and then performs an extensive and detailed descriptive analysis of their form and frequency. In addition, the author has a wider goal: to broaden our understanding of the role of prosody in language as a crucial segmenting device. Nicodemus carries out her analysis at a level that will appeal to linguists as well as to interpreters, whether novice or experienced. The author has undertaken a demanding task in her attempt to compile a broad inventory of manual and non-manual boundary markers by analyzing the responses of native signers. Nicodemus makes excellent use of tables and diagrams for this purpose, showing, for example, the frequencies of occurrence of different prosodic markers, their duration and timing relative to other prosodic cues.

PM is particularly timely for linguists and professional interpreters alike. The book is well organized, transparently written, and easily accessible without special technical knowledge of either interpretation or prosodic theory. The author divides the book into seven chapters. Chapter 1 provides the background for the study by describing the nature of signed languages, of the ASL community, and modality-specific features of sign language interpretation. This opening chapter also introduces the issues that will be discussed and examined in the rest of the book. In Chapter 2, Nicodemus defines the notion of prosody and reviews previous research on the role of prosodic boundaries in the discourse of signed and

spoken languages. She explains the importance of prosodic boundaries for the segmentation of a language stream into information constituents in both modalities. Here, she shows that prosodic boundaries are the carriers of important prosodic signals such as timing, prominence, and intonational features, which together give important cues to the structure, focus and sentence type of an utterance (Nespor & Vogel 1986; Brentari 1998; Sandler 2005). Nicodemus compares and contrasts the ways prosody is realized in spoken and sign languages, and gives an enlightening account of the cognitive complexities involved in interpreting from one language modality to the other.

Chapter 3 constitutes the body of the research project. The author presents the methodology of the study in great detail and includes information about stimulus development, for which five professional interpreters provided stretches of signing for the perception study by translating a spoken English university lecture into ASL. In addition, she describes the device used by the Deaf participants in the perception study to mark the supposedly perceived boundaries. Fifty deaf persons were asked to view these videotaped interpretations and to indicate perceived boundaries by pushing a button. The analysis of the participants' responses focuses on 'clusters of agreement', which are defined in the book as one-second intervals within which positive boundary responses were received from six or more Deaf participants. In order to establish the prosodic "triggers" of those responses in the stretches of signing, a two-second interval around each agreement cluster is delineated as a window for the coding and analysis of the interpreters' prosody. More specifically, the stretches of signing around the marked points were examined and coded for the presence of twenty-one manual and non-manual markers that might be responsible for the perception of a prosodic boundary. All of the relevant categories of prosodic markers to be coded are listed and illustrated with figures and clarifications. The exposition of the research design is clear and easy to follow.

Chapter 4 tackles the issue of the reliability of the agreement patterns among the Deaf participants in the study. Nicodemus counters the possibility that the participants' agreement patterns are an artifact of the experimental design with evidence that the responses clustered because of a collective reaction to the experimental stimuli. She addresses this issue through ample randomization trials, the goal of which was to check the probability of the occurrence of chance clustering. The author maintains that the extremely low incidence of agreement clusters in the randomization trials in comparison with that in the experiment strongly suggests that the latter were real responses to the perceived sentence boundaries. The same chapter provides examples of the coding sheets and prosodic analysis used in the study.

The next three chapters present and discuss the patterns of boundary markers that emerged from the analysis of the data. There are many noteworthy results in Nicodemus' book. Chapter 5 presents the findings on three aspects of the prosodic

system: the frequencies of particular prosodic markers in the analyzed stretches of signing, their duration, and the average number of prosodic cues marking a prosodic boundary. The author carries out a careful and detailed analysis for each and every category of prosodic cues: hands, head/neck, facial expressions, and body movements. As in other studies, this study found that both manual and non-manual markers signal boundaries. The most frequent non-manual prosodic markers were related to the Eye Aperture category, which in Nicodemus' analysis included closed, widened, and squinted eyes.¹ The most extensively used manual prosodic feature was Hand Clasp. Nicodemus makes an interesting observation that the durational differences among various articulators can be related to the different magnitudes of movement. The chapter also deals with the number of prosodic markers employed at the boundaries, demonstrating that the inventory of boundary markers in ASL interpretation is made up of a limited set of markers: seven or more prosodic markers are often produced within a two-second interval. Whether this interval can be considered a prosodic boundary, however, is not clear from the exposition, and we will return to this issue below.

In studies on sign language prosody, the issues of which cues count as prosodic, and the way in which these cues align at boundaries have assumed an important role (e.g., Baker & Padden 1978; Baker-Shenk 1983; Coerts 1992; Nespor & Sandler 1999; Boyes Braem 1999; Wilbur 1999; Fenlon 2010). In particular, researchers have found that two or more prosodic cues typically coincide at major prosodic boundaries, such as the intonational phrase boundary (Nespor & Sandler 1999; Wilbur 1999). Chapter 6 of *PM* provides more information about the temporal alignment of prosodic cues in relation to each other. Here, Nicodemus reports on the timing of the prosodic signals appearing at the boundaries in relation to the manual feature Hand Clasp and on the patterns of this alignment. The selection of Hand Clasp as the target for determining the alignment of other cues is motivated by the fact that this cue occurs with relatively high frequency. Only half of the prosodic markers in the coded data were co-temporal with Hand Clasp.

Finally, Chapter 7 discusses the findings of the study, brings their implications together, and raises questions for future investigation. The author notes that the study can provide a descriptive model of ASL prosodic cues and can thereby serve as a foundation for future research on the role and function of prosodic markers in ASL. Given that the stimuli were produced by interpreters signing in a particular kind of situation, this conclusion may be overstated, a point to which I return at the end of the review.

1. It is somewhat puzzling that the author counts all eye aperture actions as the same feature, so that the duration of any sequential occurrence of two such features — such as squinted eyes and closed eyes — is collapsed in one number, as if it were a single non-manual signal.

PM is a remarkable achievement and can serve as a starting point for anyone wishing to keep abreast of developments in research on prosody in sign language interpreting. In order to fully evaluate the nature and value of the study, certain limitations should be kept in mind, both in terms of the concepts assumed and in terms of the method of analysis.

It should be noted, for example, that some of the distinctions and concepts in the book are not made clear enough. To begin with, some clarification is needed for the notion of ‘sentence’. The Deaf participants in the experiment were asked to mark sentence boundaries, yet the precise nature of this concept was not explained either to the participants or to the readers. As known from the literature on sign language prosody, languages in the visual modality mark a wide range of prosodic constituents, such as phonological phrases, intonational phrases, or intonational utterances (Nespor & Sandler 1999; Fenlon 2010). The book author refrains from going far enough into the question of whether all the participants understood this term in the same way and, therefore, whether they looked for the same phenomenon during the experiment.

Another limitation involves the definition of clusters of agreement and time windows for coding. Nicodemus explains this choice of the interval length by a need to allow for reaction time variability, and notes that even a two-second interval might have been too short to include all relevant responses. This time frame is potentially problematic, as intonational phrases are often much shorter, so that a two-second period might be too long for exact prosodic calculations. Assuming that different sign languages have prosodic constituents of approximately the same length, we can compare Nicodemus’ analysis with the duration of a prosodic constituent as determined by prosodic cues in Israeli Sign Language, for example. A full intonational phrase often lasts less than one second, as shown in Figure 1 below. Note that the time estimates come from ELAN² coding.

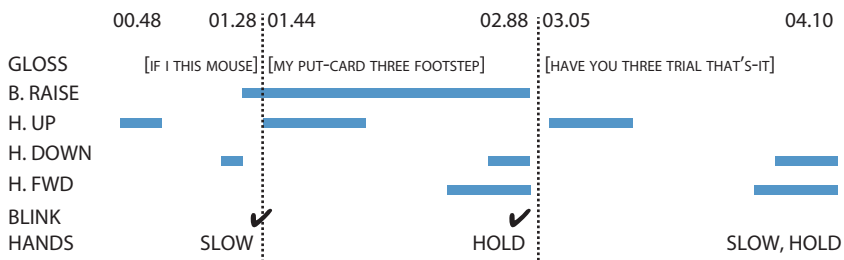


Figure 1. Three intonational phrases (separated by dotted lines) of the ISL utterance “If I put down a card with a mouse and three footsteps, you get three trials to beat me”.

2. ELAN (EUDICO Linguistic Annotator) is a multi-medial tool for the creation of complex annotations of video and audio resources (<http://tla.mpi.nl/tools/tla-tools/elan/>).

The first intonational phrase of the utterance in Figure 1 lasts from 00.48 second (the onset of the first sign in the IP) to 01.28 second (the offset of the last sign in the IP), which gives us the IP duration of only 00.8 second. This means that one second of signing can contain more than one prosodic boundary, and the use of such a large window in *PM* might obscure the real patterns of the signers' judgments. In other words, if one were to push the response button within this period of time, the analysis of the whole one-second interval for all the cues would not give us a clear answer regarding which prosodic boundary, either left, right, or both, the subject responded to. This type of data analysis can bear on the resulting patterns of the research findings. For example, in Chapter 7, the author acknowledges that she expected to see a higher percentage of simultaneously occurring markers in the data. While a two-second period of time seemed to the author short enough to prevent the sequential order of prosodic cues, other studies of prosody suggest this period might actually be long enough to host various manual and non-manual signals that may mark smaller prosodic constituents or may even be unrelated to prosody. The interrelation between the time interval for analysis and the behavior of observed prosodic phenomena is worth pursuing in future related studies.

To conclude, *PM* is a highly detailed and elaborate analysis of the poorly understood phenomenon of prosody in sign language interpreting. Despite the problems of the methodology discussed above, the study provides an extremely informative investigation of the clustering of prosodic features in interpreted discourse and is packed with very useful discussion and detailed references to relevant literature. *PM*'s emphasis on empirical data is particularly important to linguistic research aiming for descriptive adequacy.

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