Prosodic systems in all languages manipulate rhythmic and intonational cues to segment the language stream into constituents, to mark focused or emphasized constituents, and to signal the pragmatic function of utterances, such as whether they are declaratives, interrogatives, or imperatives (Ladd 1996). The existence of a prosodic system is thought to be universal, and some particular aspects of the system are very widespread, such as rising intonation for polar questions (Bolinger 1978). Yet intonational tunes vary from language to language, as anyone who has heard Russian, Hebrew, and English can intuitively attest.

In recent years, we have learned that sign languages are also characterized by prosodic systems with many similar characteristics to those of spoken languages (Sandler and Lillo-Martin 2006), showing that prosody is indeed a universal property of human language. In sign language, the hands mark the rhythmic aspects of prosody, delineating constituents, while intonation is produced systematically through facial expressions and movements of the head and body (Nespor & Sandler 1999; Dachkovsky & Sandler 2009). But the fact that all humans, hearing and deaf, use such visual displays during linguistic communication has made it difficult to determine conclusively whether signers are superimposing universal facial expressions upon the linguistic stream or whether these articulations are indeed part of a grammatical system with language-specific features as well. The present study addresses this question by systematically comparing for the first time the intonational systems of two sign languages: Israeli Sign Language (ISL) and American Sign Language (ASL). We found similarities as well as differences between the two sign languages, revealing that in the prosody of sign language, as in spoken language, a small number of features are combined in different ways to produce systematic grammatical marking.

Fifty-two sentences in Hebrew and English were used to elicit examples of polar questions, wh-questions, topics, conditionals (neutral and counterfactual), and relative clauses (Dachkovsky 2005). Five native ISL and six native ASL signers were asked to read each sentence, to internalize the meaning, and to convey the sentence in their native language to another signer. Their responses were videotaped and coded.

The results confirmed that both languages systematically signal final intonational phrase boundaries through similar manual cues: holding the hands in place, pausing, or reiterating the final sign, together with phrase final lengthening or amplification (found previously only for Israeli Sign Language by Nespor & Sandler 1999). In addition, there was a change in head position at intonational phrase boundaries, although types of change were not the same for the two languages. As for facial intonation, facial arrays were the same for certain constituent types, while differing for others in the two languages.

For example, the features head up, head down, brow raise, wide eyes, and squint produce particular intonational arrays in ASL and ISL. Figure 1 shows that both Israeli and American signers consistently produced polar questions with raised brows, wide eyes, and the head forward and down. Just as polar questions are similarly characterized across spoken languages by rising
intonation, so do signed languages signal polar questions with a common configuration of visual cues.

Topic marking is frequent in both languages, but, unlike polar questions, topics are marked differently in each language. ASL topics are marked with raised brows and the head up across the entire constituent, as seen in Figure 2. However, in ISL (Figure 3), the head begins raised, similar to ASL, but then gradually moves forward and down across the constituent. This contour head motion is consistent in ISL topics. In addition, ISL frequently marks topics with raised brows and a squint.

The study confirms that sign languages have prosodic systems which fulfill similar functions to those of spoken languages, providing evidence for the claim that prosody is a component of the grammar universally. The study also shows that the same small number of features are recruited across sign languages but distributed in different ways to create grammatical systems.

References


