COMMUNITY STRUCTURE AFFECTS CONVENERGENCE ON UNIFORM WORD ORDERS: EVIDENCE FROM EMERGING SIGN LANGUAGES

RABIA ERGIN[*1], LIMOR RAVIV[2], ANN SENGHAS[3], CAROL PADDEN[4], and WENDY SANDLER[5]

[*]Corresponding Author: rabia.ergin@gmail.com
[1]Cognitive Science Program, Boğaziçi University, Istanbul, Turkey
[2]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands
[3]Department of Psychology, Barnard College, New York City, USA
[4]Department of Communication, University of California, San Diego, USA
[5]Department of English Language and Literature, University of Haifa, Haifa, Israel

Community Structure and Emerging Sign Languages

Previous research suggests that the size and social structure of the community may play a crucial role in shaping linguistic features in the early stages of language evolution (e.g., Lupyan & Dale, 2010; Meir & Sandler, to appear; Raviv, Meyer, & Lev-Ari, 2019). Specifically, it was hypothesized that emerging sign languages that develop in small and tightly-knit communities (village sign languages) tend to have less conventionalized structure. In contrast, languages emerging in bigger communities and/or in communities whose members have less shared background (deaf community sign languages) tend to be more uniform (Meir, Israel, Sandler, Padden, & Aronoff, 2012).

Here, we directly investigate this hypothesis by focusing on a fundamental feature of languages: word order. Word order is one of the most basic linguistic conventions, and is essential for expressing semantic roles (i.e., who did what to whom). Using naturalistic data, we aim to uncover how such a key element becomes a convention in new communication systems that differ in their social structure and in their community size.

To this end, we provide the first direct comparison of word order variability (a proxy for the degree of conventionalization) in three different emerging sign languages: (1) Central Taurus Sign Language (CTSL), a village sign language used in a small community Turkey (e.g., Ergin, 2017); (2) Al-Sayyid Bedouin Sign Language (ABSL), a bigger village sign language used in Israel (e.g., Sandler, Meir, Padden, & Aronoff, 2005); and (3) Nicaraguan Sign Language (NSL), an even bigger deaf community sign language used in Nicaragua (e.g., Senghas, 1995). Given that these three languages differ in community size and social structure, they allow us to investigate whether and how these properties

influence the formation of word order conventions in the early stages of language evolution.
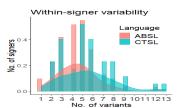
The Current Study

We examined production data from 14 CTSL and 25 ABSL deaf signers. These two communities share certain social characteristics but differ in community size. NSL represents a still larger community with different social characteristics, and data coding and analyses for NSL are in progress. All participants watched 18 short video clips, originally developed by Sandler et al. (2005). Signers were asked to describe each clip to a deaf/hearing addressee, resulting in 381 elicited responses from CTSL and 543 from ABSL signers. The clips included three types of scenarios: six transitive irreversible events in which a human agent acts on an inanimate patient (e.g., MAN-WATERMELON-TAP), six transitive reversible events in which a human agent acts on a human patient (e.g., MAN-GIRL-TAP) and six ditransitive events in which two human characters are involved in a transfer relation (e.g., MAN-GIRL-BALL-THROW).

We coded signers' productions for word order using a comparable scheme, and examined the degree of variability within signers (i.e., whether a single signer is consistent in their selected word order in a given scenario), and across signers (i.e., indicating the degree of conventionalization in the community).

Results

Preliminary results show that in all three types of scenarios, there is significantly more variance in word order preferences in CTSL as opposed to those in ABSL, both within and across signers: CTSL signers show less convergence as a community (i.e., producing significantly more word order variants across different signers, p=0.016), and are less consistent in their own productions (i.e., producing significantly more word order variants as individuals, p=0.013). These results support the hypothesis that the size of a language community has an effect on conventionalization in early stages of language emergence: the language of bigger communities is more uniform in structure that that of smaller communities (see Figures 1-2).
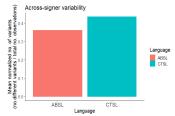

Figure 1. Within-signer variability   **Figure 2**. Variability across signers (convergence)

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