

THE SEEDS OF THE NOUN-VERB DISTINCTION IN THE MANUAL MODALITY: THE ROLE OF IMPROVISATION AND INTERACTION

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The distinction between nouns and verbs has often been considered a fundamental feature of human language (Hockett, 1960; Hopper & Thompson, 1985). Research on emergent linguistic systems, including emergent sign languages as well as homesign systems, provides a unique window onto fundamental features of language, including the noun-verb distinction. Though they are created without a language model, research suggests that homesign systems nevertheless make this fundamental distinction between nouns and verbs (Abner et al., 2019; Goldin-Meadow et al., 2014). However, use by a community and transmission across generations also play a role and may lead to more systematic grammatical category distinctions. For example, Abner et al. (2019) analysed noun and verb signs in American Sign Language (ASL, a mature sign language) as well as Nicaraguan homesigners and 3 successive cohorts of signers of Nicaraguan Sign Language (NSL, an emerging sign language). They found that certain markers of the noun-verb distinction (sign order, sign size) were present even at the earliest stages of emergence but that other properties (repetitions, basehand) showed more systematic use in more mature systems (i.e., ASL, NSL Cohort 3). For example, the use of basehand gestures (using the non-dominant hand to represent an additional component of the verbal event) was more systematic in later stages of NSL development (and not present in ASL, indicating cross-linguistic variability).

We present a study that focuses on two processes that shape the evolution of noun-verb categories in emergent systems: i) improvisation (signal creation) and ii)

interaction (signal use). In particular, we model two stages in sign language emergence: homesign, in which a new system is created, and the first generation (or cohort), in which a community of interacting users (here, former homesigners) is formed. Our study aims to further probe fundamental conceptual properties underlying the noun-verb distinction and how the coding of this distinction, present in improvised forms, might change due to conventionalization during interaction between users.

In our experiment, hearing non-signers improvised gestures to communicate a set of events, and then used those gestures either in interaction or in further isolated production. Thus, we model the distinction between continued use (as with adult homesigners) versus continued use *with* others (as when a community exists). Our events comprised video stimuli previously used by Abner et al. (2019), in which objects are used in either a typical or atypical context (e.g. taking a photo with a camera vs. digging with a camera). The typical scenarios are expected to elicit more verb-like forms, and the atypical scenarios, which highlight the object, to elicit more noun-like forms.

Participants across two studies took part either as individuals, or in pairs. Across conditions, participants first underwent an individual production stage, in which they had to improvise gestures for the events shown, without a partner. Following the first stage, participants in pairs took part in a communication round, taking turns to produce gestures for events with a partner, before completing a final round identical to the first individual production round (see figure 1). Individuals completed 3 comparable individual production rounds, without a partner.

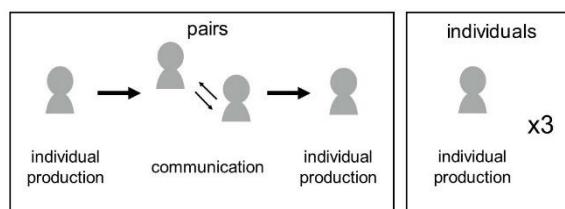


Figure 1 Stages in the experiment for pairs and individuals. Pairs produce gestures individually before communicating with each other, followed by another individual production round. Individuals complete 3 individual production rounds, with no partner present.

We analysed the parameters of gesture found to track the noun-verb distinction in sign languages by Abner et al. (2019) and other research. Preliminary results indicate similarities between the stages in our experiment and Nicaraguan homesigners and first cohort signers. Participants use both gesture order and basehand use to distinguish typical and atypical events; other parameters, such as repetitions and gesture size, do not systematically distinguish noun- and verb-like forms, but reflect iconic affordances of the events. As such, though some distinctions can be improvised, neither improvisation nor interaction by itself are sufficient for the range of formal distinctions found in naturally emerging languages.

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