Evidence of an emergent classifier system in Zinacantec Family Homesign

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Classifier predicates are widely attested among established sign languages documented to date [1]. Furthermore, classifier-like uses of handshape have been observed in homesigners who have not been exposed to conventional linguistic input [2,3]. What is not yet known is how classifier systems develop in an emergent linguistic community. To address this gap, this study explores the production of classifier-like handshapes in Zinacantec Family Homesign (ZFHS), an emerging sign language developed by three adult deaf siblings and four of their hearing extended family members in Zinacantán, a Mayan community of Chiapas, Mexico [4].

Classifier-like verbs of motion were elicited from all seven ZFHS signers as well as 15 sign-naïve English-speaking undergraduates using the Verbs of Motion Production test (VMP) [5]. Though originally designed for American Sign Language, the VMP has also been adapted for use with signers of other national sign languages, homesigners, and hearing gesturers [2,6]. The VMP stimuli feature moving objects that are grouped into 10 categories defined either by size and shape or by semantic class. Following previous studies [2, 3, 6], consistency among in the production of handshape was evaluated in terms of (i) the average number of handshapes produced per category, and (ii) the frequency of the most common handshape per category. The former serves as a measure of variability in handshape production, while the latter serves as a metric of how consistently a signer uses the same handshape to represent objects of the a given category. Quantitative results are summarized in Table 1.

(i) The deaf ZFHS signers produced fewer handshapes per category than the hearing ZFHS signers (both adults and children) and the sign-naïve gesturers. Whereas the deaf signers rely on a small number of high-frequency handshapes, the hearing signers and gestures produce a variety of low-frequency handshapes. These results suggest that the use of sign as one's primary communicative modality correlates with greater consistency in mapping form (handshape) to meaning (referent category).

(ii). Among both deaf and hearing ZFHS signers, the most common handshape per category comprised a greater proportion of responses than it did among the child ZFHS signers or the gesturers. This suggests a greater degree of conventionalization among the adults than the children or the gesturers. However, the scores for the adult ZFHS signers are still lower than scores reported for established sign languages [6]. These results indicate that handshape production is more conventionalized in ZFHS than in gesture, but not quite as conventionalized as in established sign languages.

This preliminary study begins to shed light on the process by which conventionalization emerges in a nascent sign language. The deaf signers, who are at the "core" of the ZFHS community, exhibit the highest levels of consistency in handshape production. Moving outward from the core to the hearing adults and children, lower levels of consistency are observed. Nonetheless, there is overall more consistency in ZFHS than in spontaneous silent gesture, which points to the role of a stable signing community in facilitating the conventionalization.

	Deaf ZFHS adults	*Hearing ZFHS adults*	*Hearing ZFHS children*	*Gesturers*
# HS/category	3.53 (0.39)	4.35 (0.35)	4.35 (0.05)	4.72 (0.77)
Frequency (%) of the most common HS/category	0.49 (0.14)	0.48 (0.19)	0.32 (0.10)	0.27 (0.06)

Table 1. Two metrics of consistency in handshape production: the number of handshapes produced per category, and the frequency of the most common handshape per category (i.e. the proportion of responses that contain the most common handshape). Standard deviations are given in parenthesis.

Zinacantec Family Homesign (Z sign) as of 2019
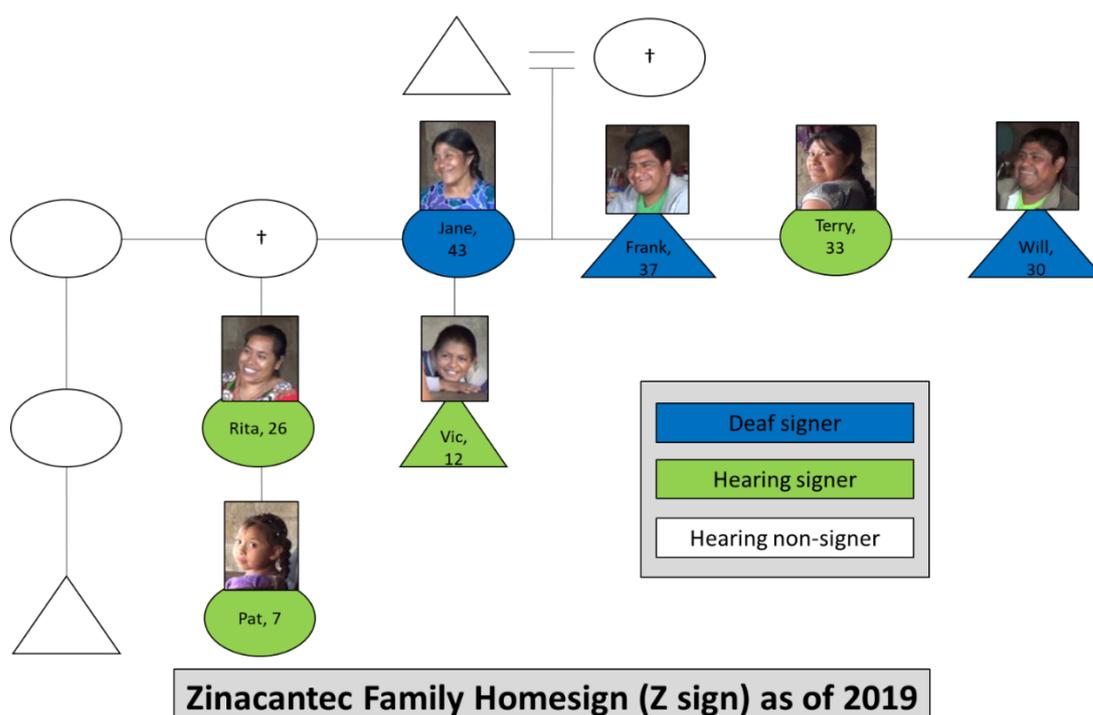
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