



Chimpanzees Modulate Signs in Requests

Kailie Dombrausky¹, Grace Coffman¹, E. Chadwick de Bree ¹, Mary Lee Jensvold^{1,2}
¹Central Washington University, ²Friends of Washoe
Correspondance: kailie.dombrausky@cwu.edu



Introduction

To make requests in American Sign Language (ASL), native Deaf signers modulate their signs by raising the eyebrows, maintaining eye gaze with the recipient, and holding the sign in place for an extended duration¹. Five signing chimpanzees lived at the Chimpanzee and Human Communication Institute (CHCI). Reliable caregivers recorded systematic detailed observations of the chimpanzees’ signing and the situational context in sign logs. The chimpanzees use the signs in a variety of communicative functions, such as statements, responses, descriptions, conversational devices, performatives, and requests. In a 2-year sample of sign logs requests appeared 12.5% of the time and 8.2% contained modulations².

Methods and Materials

- Five signing chimpanzees (Washoe, Moja, Tatu, Dar and Loulis) lived at CHCI during the time of this study.
- We queried 962 sign logs recorded by reliable caregivers at CHCI from the years 2000-2007
- We searched for keywords “request” (RQ), “eye gaze” (GZ), “held sign” (HS), and “raised brow” (RB)
- We classified each utterance by a single or co-occurrence of modulation, which we then counted



Loulis



Moja

Examples from the Sign Logs

- “...DAR then signed DRINK 1L/1 slowly and exaggerated and then repeated DRINK 1L/ I replied SORRY CAN’T/. He then signed ICE CREAM XL/1 with a **RB [raised brow]**” (178)
- “I was almost done serving soup during lunch and was standing in front of Moja to see if anyone wanted anymore. Moja looked at me and clearly signed POTATO 1L/ 1 with a **raised brow** and **held it**” (85)
- “...Figuring that she would steal his celery I signed GO THERE/ pointing towards cage 2. Tatu responded YOU GO THERE 1R/1. I then responded with NO YOU GO THERE/ again pointing towards cage 2. Tatu repeated her **request** with GO THERE 1R/1 and **holding it**” (853)

Results

Table 1. Frequency of Modulation by Chimpanzee.

	Dar	Loulis	Moja	Tatu	Washoe	Total
GZ	14	1	1	65	2	83
HS	7	-	3	35	2	47
HS+GZ	2	-	1	29	-	32
RB	3	-	-	123	-	126
RB+GZ	1	-	-	61	2	64
RB+HS	2	-	1	33	-	36
RB+HS+GZ	-	-	1	12	-	13
Total	29	1	7	358	6	401

Table 2. Frequency of Modulation Co-Occurring with Request.

	Dar	Loulis	Moja	Tatu	Washoe	Total
GZ+RQ	1	-	1	20	2	24
HS+RQ	-	-	-	13	-	13
HS+GZ+RQ	-	-	-	6	-	6
RB+RQ	-	-	-	48	-	48
RB+GZ+RQ	-	-	-	10	-	10
RB+HS+RQ	-	-	-	14	-	14
RB+HS+GZ+RQ	-	-	-	8	-	8
RQ	6	-	4	58	2	70
Total	7	-	5	177	4	193

Conclusions and Discussion

- “Raised brow” and “gaze” were the most frequent modulation types. Their mutual co-occurrence was the the 3rd most frequent modulation type.
- Utterances categorized as “request” occurred more often with modulation than without modulation. This highlights the importance of modulations in signaling a request, in both human and nonhuman signers. The present study indicates that modulations are vital for distinguishing requests from other communicative functions.
- The chimpanzees used patterns of modulation similar to those used by native Deaf signers in requests. This study contributes to our understanding of the patterns of behavior in signing, as well as patterns of pragmatics and modulation.



Tatu signs rice



Washoe



Dar

References

1. Covington, Virginia C. 1973 Juncture in American Sign Language. *Sign Language Studies* 2:29-38.
2. Leeds, Austin L. and Mary Lee Jensvold 2013 The communicative functions of five signing chimpanzees (Pan troglodytes). *Pragmatics and Cognition*, 21(1), 224-246.