Rates of fingerspelling in American Sign Language  
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Introduction
Fingerspelling used often in American Sign Language (ASL)  
- Mortk & MacFame (2003); corpus of 4,111 signs (27 signers)  
- 67% of signs in casual signing  
- 48% of signs in formal signing  
- 5.8% of signs in narrative signing  
- Padden & Gansauls (2003)  
  - 10% - 15% of signs in discourse  
  - > 50% of native signers: fingerspelled 20% of time  
  - non-native signers: lower frequency of fingerspelling  

Fingerspelling is used for various purposes  
- For the introduction of a spoken/written language term into the signed segment  
- To communicate particular aspects of the English word that is fingerspelled (Padden & Gansauls, 2003)  
- A technique for connecting texts such as a sign, a printed or written word, or a fingerspelled word (90)  

Statistics:
mixed-model Signer (2) X Setting (3) X Word Length (2)
- main effect for Signer (F (1, 459) = 36.67, p < .0001) letters per second: James = 8.41, Kevin = 6.39
- main effect for Word Length (F (1, 459) = 12.02, p < .001) letters per second: long = 7.65, short = 7.08
- no main effect for Setting (F (2, 459) = 2.54, p = .079, N.S.) non-formal = 7.1, formal = 7.75, school = 7.22
- significant interaction between Signer and Setting (F (2, 459) = 9.05, p < .001). (see Figure 1)
- pair-wise comparison on Signer X Setting Interaction school Settings differed: (459) = 5.71, p < .001 formal Settings differed: (459) = 4.44, p < .001 non-formal Settings did not differ: (459) = 0.09, p = .93, N.S.

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Previous research:
- Zaka & Harber (1971): 6.17 tri/sec (162 milliseconds (ms)/tr)
- Wilcox (1999): 4.68 tri/sec (93 ms/tr)
- Jarde et al., (2003): 3.4 tri/sec (250-333 ms/tr)
- Hanson (1992): 5.88 tri/sec (170 ms/tr)

However, there are no studies of fingerspelling rates across diverse items (i.e., different types of words) or relatively large sets of items. Additionally, studies of fingerspelling rate have not considered the role of word length, a variable which has been shown to be meaningful for speaking rates (Ferguson et al., 2002; Yuan et al., 2008).

Finally, the role of audience influence also has not been considered.

Research Questions:
1) Do signers differ from each other in fingerspelling speed?
2) Are short words fingerspelled at different rates than long words?
3) Do fingerspelling vary for speaking speeds based on whom they are addressing (e.g., school-aged children versus adults)?
4) Does formality of a setting (e.g., less formal vs. more formal) influence fingerspelling rate?

Methodology

Research Questions:
4) Does formality of a setting (e.g., less formal vs. more formal) influence fingerspelling rate?
5) Is rate of fingerspelling a marker than can be used to identify a “formal” register of ASL?

Finger spelling rate?
- 55 minutes of ASL narratives (total)  
- 471 fingerspelled words (total)  
- 271 long words (4 or more letters)  
- 240 short words (3 or fewer letters)  
- Kevin: 249 words; James: 222 words

Information in the text (examples of items that were fingerspelled):  
- Where Don lived (various states and cities such as Idaho, Indiana, and Dallas) and worked (e.g., Gallaudet University, Model Secondary School for the Deaf, etc.)
- Don’s involvement in the Deaf community including advocacy work (e.g., for the Texas Commission for the Deaf)
- Anecdotes about Don’s life (e.g., Don’s joke-telling & humor)

Fingerspelling and rates of speaking (e.g., syllables per second)?
- Faster rates than previously reported
- Means: 5-8 letters per second (125 – 200 ms/tr)
- Signers can differ in rates: Some signers are faster fingerspellers than other signers
- “Long” words are fingerspelled faster than “short” words
- A setting or audience does not necessarily have an effect on fingerspelling rate, but it can for some signers
- Signers in this study fingerspelled at a similar rate (7.5 – 8 ltrs/sec) in the formal setting (an interesting result)

Future questions:
- Would other signers pattern within the fingerspelling rate ranges reported here?
- Is there a comparison that can be made between rates of fingerspelling and rates of speaking (e.g., syllables per second)?
- Is rate of fingerspelling a marker than can be used to identify a “formal” register of ASL?

References

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