Highlights of three psycholinguistics overviews
presented by Kie Zuraw, 25 Feb 2020

Brentari 2019: phonological processing
Corina, Gutierrez & Grosvald 2014: production
Emmorey 2009: psycholinguistics of signed vs. spoken languages

- See the cited overviews for original references and more detail
- Focus is on just a few findings that are straightforward and compelling (to me)—there's lots more to read about in these articles if you're curious

1. **Slips of the hand** (Brentari; Corina & al.; Emmorey)
   - As with slips of the tongue, there occur exchanges not just of whole signs, but of components
     - handshape (most common), movement location
     - can be anticipatory (most common), perseveratory, or metathetic (least common)
     - errors usually "structure-preserving": result is a legal sign
   - German Sign Language (DGS) example
     - SEINE should have B-handshape, but instead gets ELTERN's Y-handshape

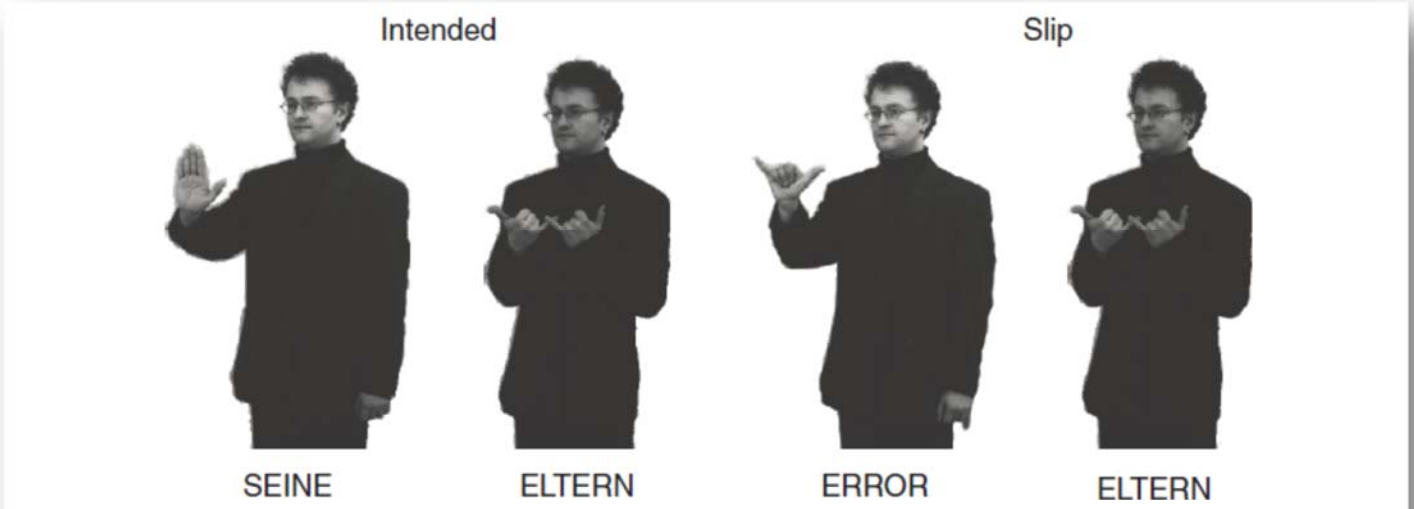


Figure 43.5 Illustration of the intended phrase SEINE ELTERN ('his parents') and a slip of the hand in Deutsche Gebärdensprache (German Sign Language) In the slip, the Y hand configuration of ELTERN is anticipated and substituted for the intended B hand configuration of SEINE. From Hohenberger et al. (2002). Reprinted with permission.

(Emmorey p. 716)

- ASL example
    - MUST SEE
    - MUST gets the selected fingers of SEE, but keeps its original joint configuration

Figure 6.2 A slip of the hand in ASL involving regressive assimilation of the selected fingers (cf. Klima & Bellugi, 1979)

(Brentari p. 170)

- By the way there are lots of great drawings in Klima & Bellugi 1979, ch. 5, but I'm not pasting them here in case someone decides to present them—if not I might add them to the example bank

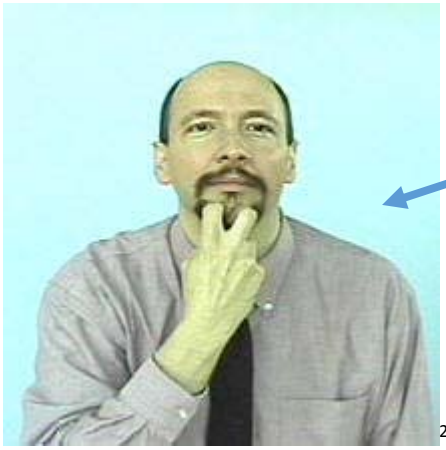
2. **Time-course of word recognition** (Emmorey)
    - In gating tasks, signed words are identified after about 35% seen
        - cf. spoken words, identified after about 80%
    - Maybe because so much of a sign's info is available simultaneously from beginning
        - Relatedly, maybe the uniqueness point tends to be earlier

3. **Tip-of-the-finger states** (Brentari; Corina & al.; Emmorey)
    - Reminder: a tip-of-the-tongue state is when you can't recall a word but have the feeling that you almost can
        - there are experimental methods to encourage this state
        - linguists are usually interested in what you can remember about the word (number of syllables? first letter?)
    - Participants tend to recall handshape, location, orientation more than movement
        - cf. tip-of-the-tongue results where speakers are more likely to remember the beginning of the word

4. **Picture naming in the presence of a distractor word (Corina & al.; Emmorey)**

 [1]

picture of a sheep

 [2]

ASL sign for GOAT—video overlaid semi-transparently on picture of sheep

not a real stimulus item!

- If distractor is phonologically related, facilitates picture naming
  - though maybe only if distractor shares movement and location with target
- If distractor is semantically related and presented early, can slow things down
- Similar to results for spoken languages
  - supports model where concept is retrieved first, then form

5. **Self-monitoring** (Corina & al.; Emmorey)
   - Signers mostly rely on proprioception, not vision
     - signers have a hard time understanding sign filmed from signer's point of view
     - signers don't sign bigger when blindfolded, unlike speakers who often talk louder when they can't hear themselves
   - And keep in mind, signer rarely can see own face at all
   - Factoid from Emmorey: ASL version of 'um' is 5 handshape with wiggling fingers

6. **Categorical perception** (Brentari, Emmorey)
   - Reminder: imagine a single-dimension contrast, such as Voice Onset Time (VOT)
     - there is a point on the continuum where perceivers vary in which category they perceive (e.g., 30 msec VOT for English /p/ vs. /b/)
     - perceivers are best at discriminating stimuli that fall one on each side of that point

[1] https://en.wikipedia.org/wiki/Sheep#/media/File:Flock_of_sheep.jpg
[2] http://www.lifeprint.com/asl101/pages-signs/g/goat.htm

- Examples of stimuli for handshape continua

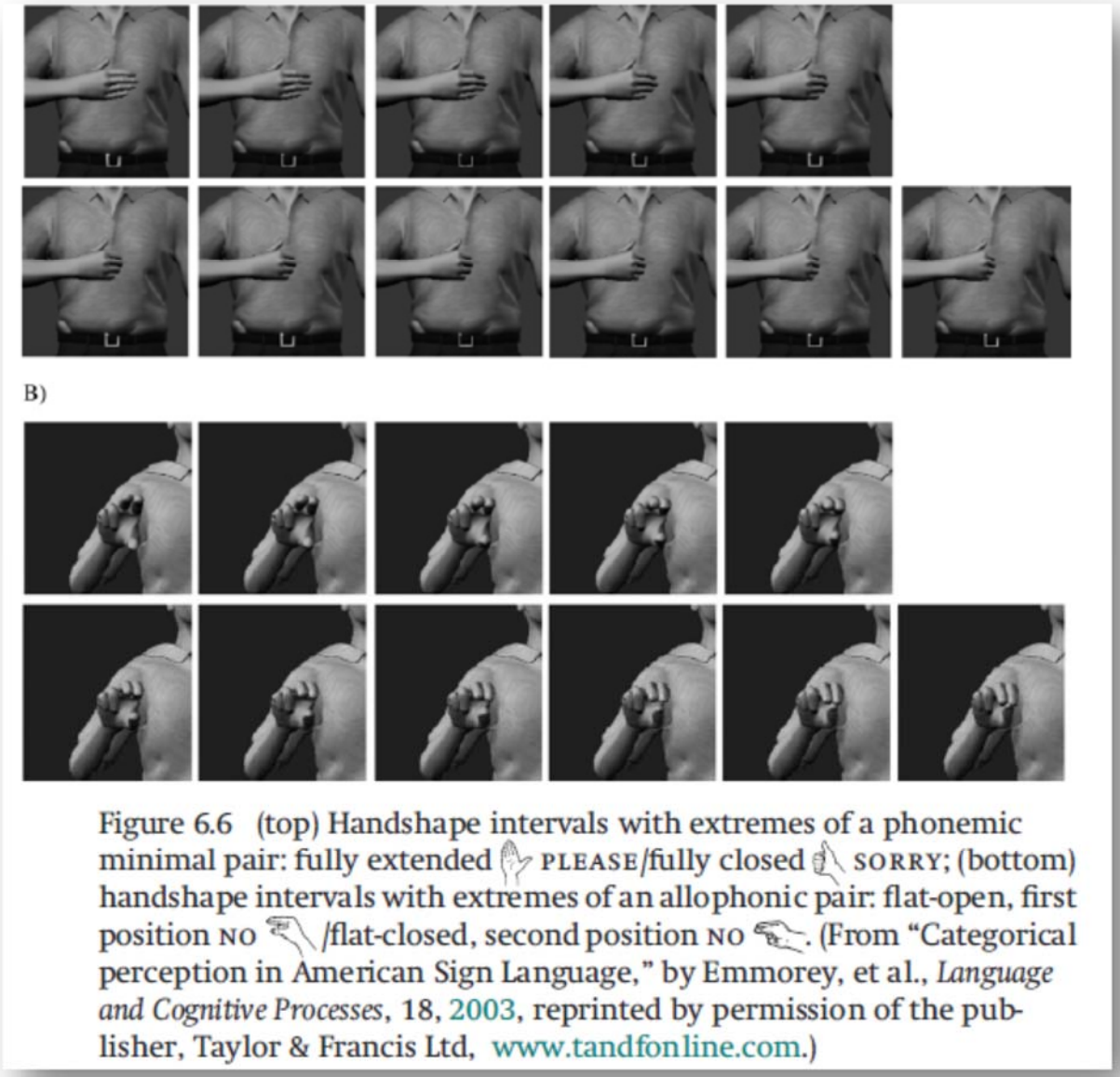


Figure 6.6 (top) Handshape intervals with extremes of a phonemic minimal pair: fully extended PLEASE/fully closed SORRY; (bottom) handshape intervals with extremes of an allophonic pair: flat-open, first position NO /flat-closed, second position NO . (From "Categorical perception in American Sign Language," by Emmorey, et al., *Language and Cognitive Processes*, 18, 2003, reprinted by permission of the publisher, Taylor & Francis Ltd, www.tandfonline.com.)

(Brentari p. 181)

- Results for signed languages have been very mixed! Generally weaker than for speech
  - e.g., in Emmorey's studies, signers, but not non-signers, had categorical perception for handshape
  - and no categorical perception for place of articulation
    - maybe because it's too phonetically continuous
  - It seems like one limit here might be a ceiling effect
    - people are just good overall at discriminating these stimuli

7. **Bonus example: handshapes in ASL vs Cambodian Sign Language**

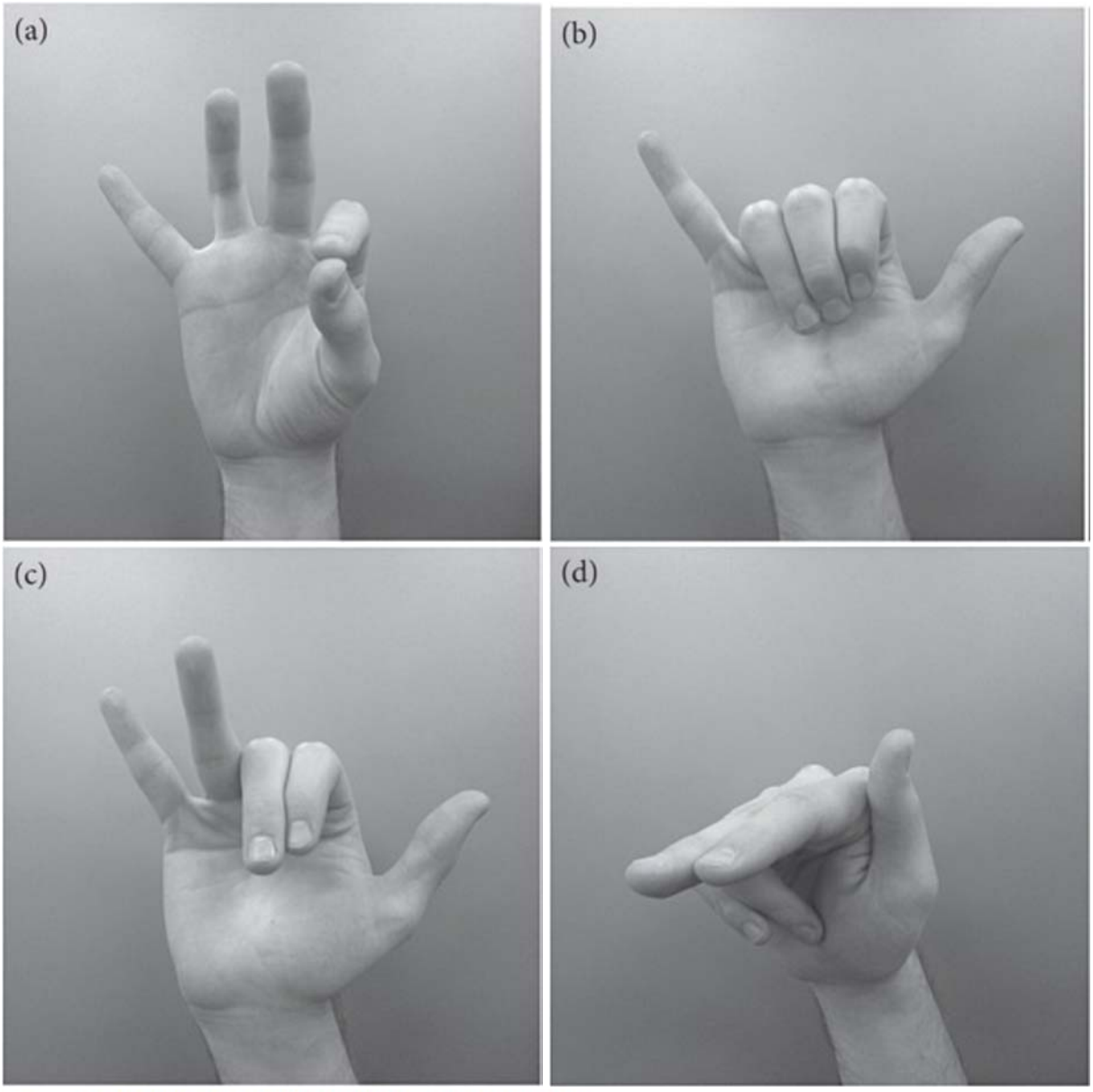


Figure 24.1 The F and Y handshapes are found in lexical signs in both ASL and Cambodian Sign Language (a and b). Handshapes found in lexical signs in Cambodian Sign Language but not ASL (c and d). (From Woodward, J., & The Cambodian Sign Language Production Team. (2010). Cambodian Sign Language-English and English-Cambodian Sign Language Dictionary. Hong Kong: The Centre for Sign Linguistics and Deaf Studies, The Chinese University of Hong Kong.

(Corina & al. pp. 4-5)

8. Bonus example: Italian Sign Language minimal pairs (Emmorey p. 705)

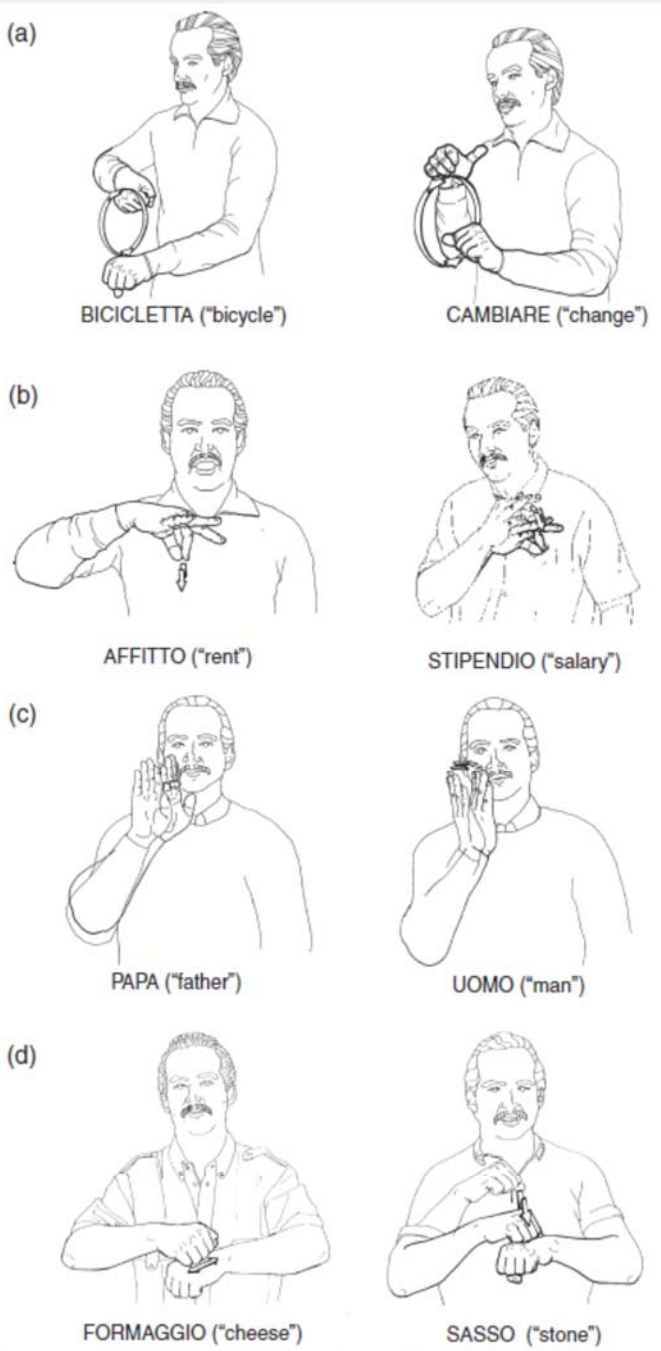


Figure 43.1 Examples of minimal pairs in Lingua Italiana dei Signi, LIS (Italian Sign Language) (A) signs that contrast in hand configuration; (B) signs that contrast in place of articulation (location); (C) signs that contrast in orientation; (D) signs that contrast in movement. Illustrations from V. Volterra (ed.), *La lingua italiana dei segni*. Bologna: Il Mulino, 1987 (new edn 2004) Copyright © Virginia Volterra and Elena Radutzky. Reprinted with permission.

(Emmorey p. 704)

References

Brentari, Diane. 2019. Sign language phonological processing. *Sign language phonology*, 166–196. Cambridge University Press.

Corina, David P., Eva Gutierrez & Michael Grosvald. 2014. Sign language production: An overview. *The Oxford handbook of language production* (Oxford Library of Psychology), 393–413. New York, NY, US: Oxford University Press. doi:10.1093/oxfordhb/9780199735471.013.021.

Emmorey, Karen. 2009. The Psycholinguistics of Signed Andspoken Languages: How Biology Affects Processing. In Gareth Gaskell (ed.), *Oxford Handbook of Psycholinguistics*. Oxford University Press.

Klima, Edward & Ursulla Bellugi. 1979. *The Signs of Language*. Cambridge, Mass.: Harvard University Press.