

Mandel, Mark A. 1979. Natural Constraints in Sign Language Phonology: Data from Anatomy. *Sign Language Studies* 24(1). 215–229. (Mandel 1979)

presented by Kie Zuraw, 14 Jan. 2020

1. The knuckle-wrist connection

- It's hard to fully bend (flex, close) all three finger joints while also bending the wrist
 - Mandel's experiment to try
 - let your hand hang forward, relaxed
 - then curl up the fingers
 - wrist will probably straighten up
- It's hard to fully straighten (extend or retroflex, open) all three finger joints while also extending the wrist
 - Mandel's experiment
 - extend your fingers as much as possible, so they actually arch back a little
 - extend wrist
 - fingers will probably go from retroflexed to straight
- This is because the muscles that bend and straighten the knuckles pass over the wrist and aren't long enough

2. Search of the Dictionary of American Sign Language (Stokoe, Casterline & Croneberg 1965)

- 62 signs where fingers open or close while wrist either flexes or extends
- Most of them follow the pattern of avoiding knuckle-wrist conflict
 - but not all!
 - So this is a **probabilistic phonotactic** with **phonetic grounding**

Hand movement		<u>palmward</u>	<u>dorsad</u>	
Finger action	<u>open</u>	17	8	25
	<u>close</u>	8	29	37
		25	37	n = 62

(p. 220)

3. Loan adaptation of fingerspelled words into ASL

- Battison's (1978) corpus includes 11 relevant examples (exactly 2 handshapes, change from first to second involves opening or closing fingers, wrist flexes or extends)
- 9/11 follow the predicted pattern
 - the two exceptions flex only one knuckle and may be restricted by the morphology of a native sign being copied over

		WRIST ACTION	
		FLEXION	EXTENSION
finger action	opening	#OR #OK #ASK	m
	closing	#NO #WOULD(b)	k (m) k m
			#GO #B S #BUT #YES #WHAT(c) #WOULD(a) k

Legend: (a), (b), etc., from Battison (1978), distinguish different forms of loan sign. Here unless noted such forms are combined; e.g. #YES(a) and #YES(b) are considered a single entry

k, finger action only at first knuckle

m, possible morphological modeling on a native sign

(m), possible morphological modeling only for some forms



ASL BULLSHIT (B.S.) from (Hochgesang, Crasborn & Lillo-Martin 2019)

- From Mandel's description this is different from the B.S. reported in Battison, which is two-handed
- But it does still show a change from extended fingers/neutral wrist to flexed fingers/extended wrist

4. Variation or diachronic change in some ASL words

- EXPLODE
 - Citation form per (Stokoe, Casterline & Croneberg 1965): hands open while separating and uncrossing
 - **iconic** but phonetically unnatural
 - Mandel's consultant says "I know it *should* be like that, but..." and *closes* her hands while separating and uncrossing
 - **uniconic**, phonetically natural
 - A more recent citation form shows handshape not changing at all:
 - by the way, I also looked at a few ASL news videos about explosions, and they seemed to use the older form



(Hochgesang, Crasborn & Lillo-Martin 2019)

- STEAL
 - Citation form per (Stokoe, Casterline & Croneberg 1965): should and elbow do the work of moving hand as fingers close from V to bent-V shape
 - Similar citation form from Lifeprint:



- But Mandel's consultant accomplishes most of the hand motion by extending the wrist (while flexing the fingers)

¹ <https://www.lifeprint.com/index.htm>

References

- Battison, Robin. 1978. *Lexical borrowing in American Sign Language*. Silver Spring: Linstok Press.
- Hochgesang, Julie, Onno Crasborn & Diane Lillo-Martin. 2019. *ASL Signbank*. New Haven, CT: Haskins Lab, Yale University. <https://aslsignbank.haskins.yale.edu>.
- Mandel, Mark A. 1979. Natural Constraints in Sign Language Phonology: Data from Anatomy. *Sign Language Studies* 24(1). 215–229. doi:10.1353/sls.1979.0006.
- Stokoe, William, Dorothy Casterline & C. Croneberg. 1965. *A Dictionary of American Sign Language on Linguistic Principles*. Silver Spring, MD: Linstock Press.