

Finding systematicity in the margins: Polysyllabic forms in the ASL Lexicon

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Polysyllabic forms in the ASL lexicon

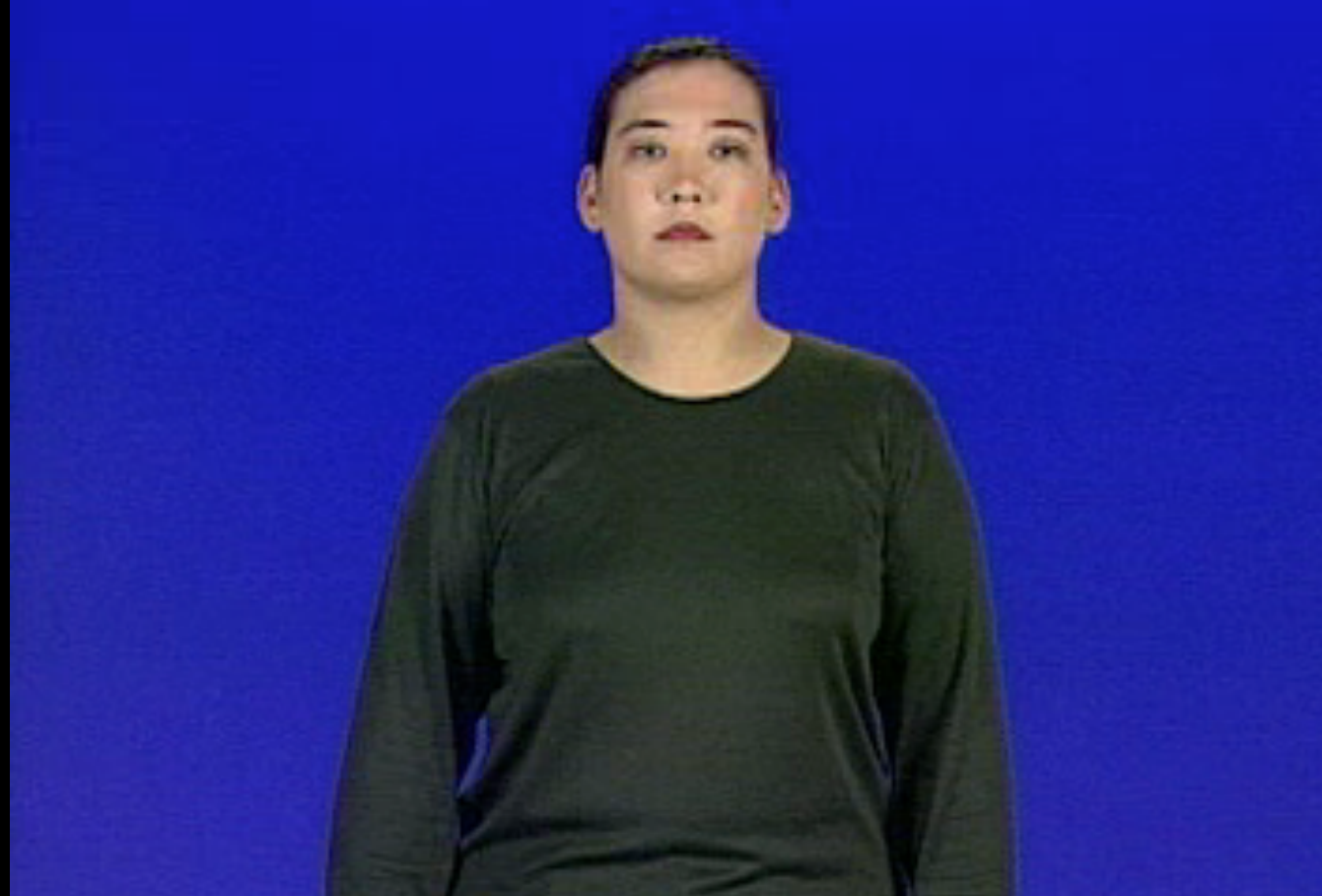
- **Scope of analysis:**
 - Polysyllabic lexical items with multiple distinct syllables (i.e. first and subsequent syllables are not repetitions of one another)
 - Polysyllabic lexical items will be divided into compound and non-compound forms

Examples: Compound



FIREPLACE

Examples: sign + agentive morpheme



REPORTER

Examples: Other



TIE (verb)

Polysyllabic forms in the ASL lexicon

- Why look at these forms?
 - **Margin cases** can provide additional insights (Bybee 1994)
- From an information theory based perspective, the rarity of these forms makes them **more complex**.

Polysyllabic forms in the ASL lexicon

Primary question:

Do polysyllabic lexical items exhibit constraints in their form?

Polysyllabic forms in the ASL lexicon

- **Preview of findings:**

- Non-compound polysyllabic items in the lexicon display some **restrictions** in their form, as well as **sub-regular patterns**.

- These distributional characteristics are not shared by compounds

Presentation overview

1. Background: Polysyllabic forms in the ASL lexicon
2. Dataset and distribution of forms
3. Discussion
4. Compounds vs. other polysyllabic forms
5. Conclusions and future directions

Previous accounts

- Perlmutter (1992):
 - Claim: Secondary movements, ('trilled movements'), do not occur in monomorphemic, disyllabic lexical items.
- Restriction does not hold for signs that are morphologically derived.

Previous accounts

- Example of an impossible sign according this



GAMBLE

Previous accounts

- Brentari (1996):
 - Perlmutter's account does not hold for all examples:
 - Exceptions: AMAZING, MAGIC, GAMBLE, HYPNOTIZE

Previous accounts

- Brentari (1998):
 - Constraints on polysyllabic, monomorphemic signs
 - circle+straight movement allowed
 - straight+circle movement not allowed
 - Restricted to two movements (2-MVT constraint)

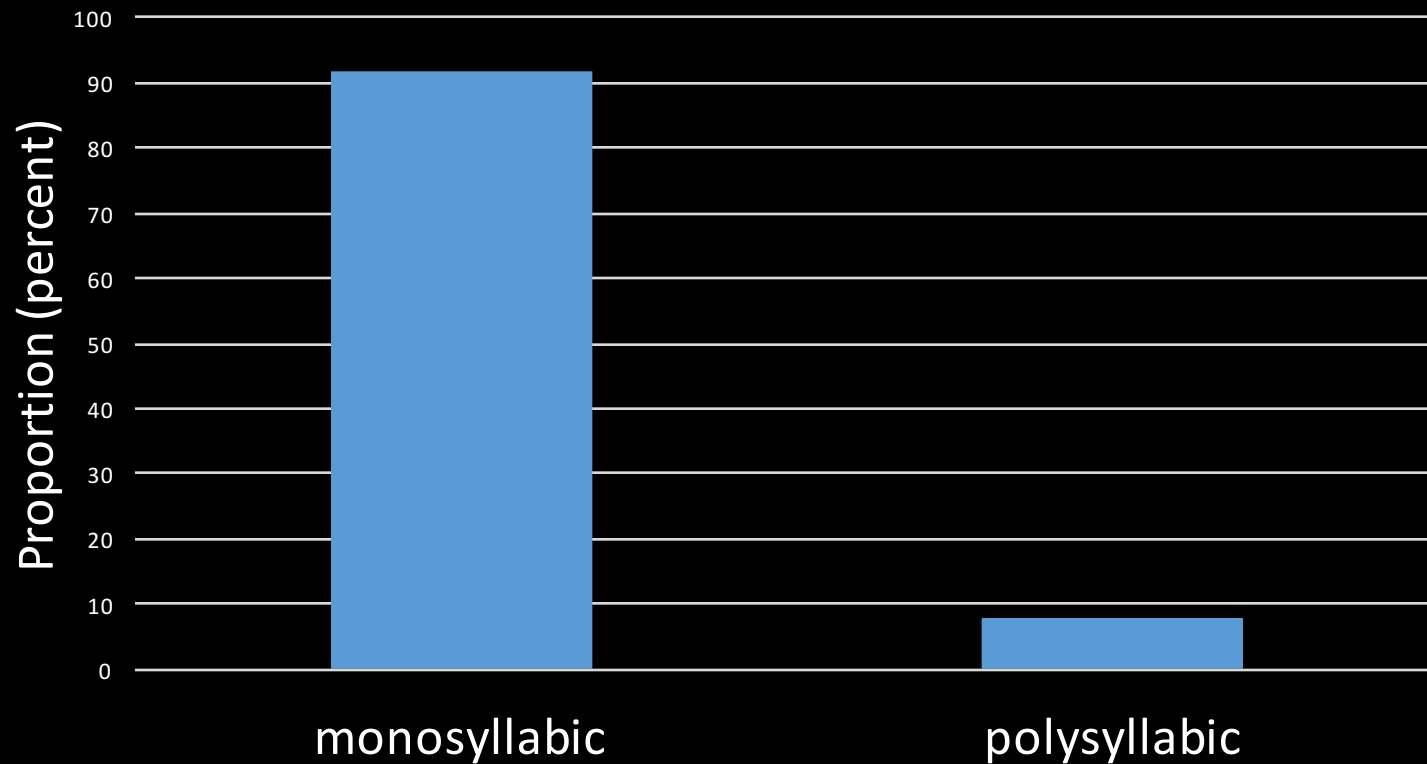
Dataset

Gallaudet Dictionary of American Sign Language (Valli, 2006):

- a dictionary comprising 2,998 video entries in ASL.
- Entries excluded:
 - fingerspelled words
 - full phrases

Distribution in the lexicon

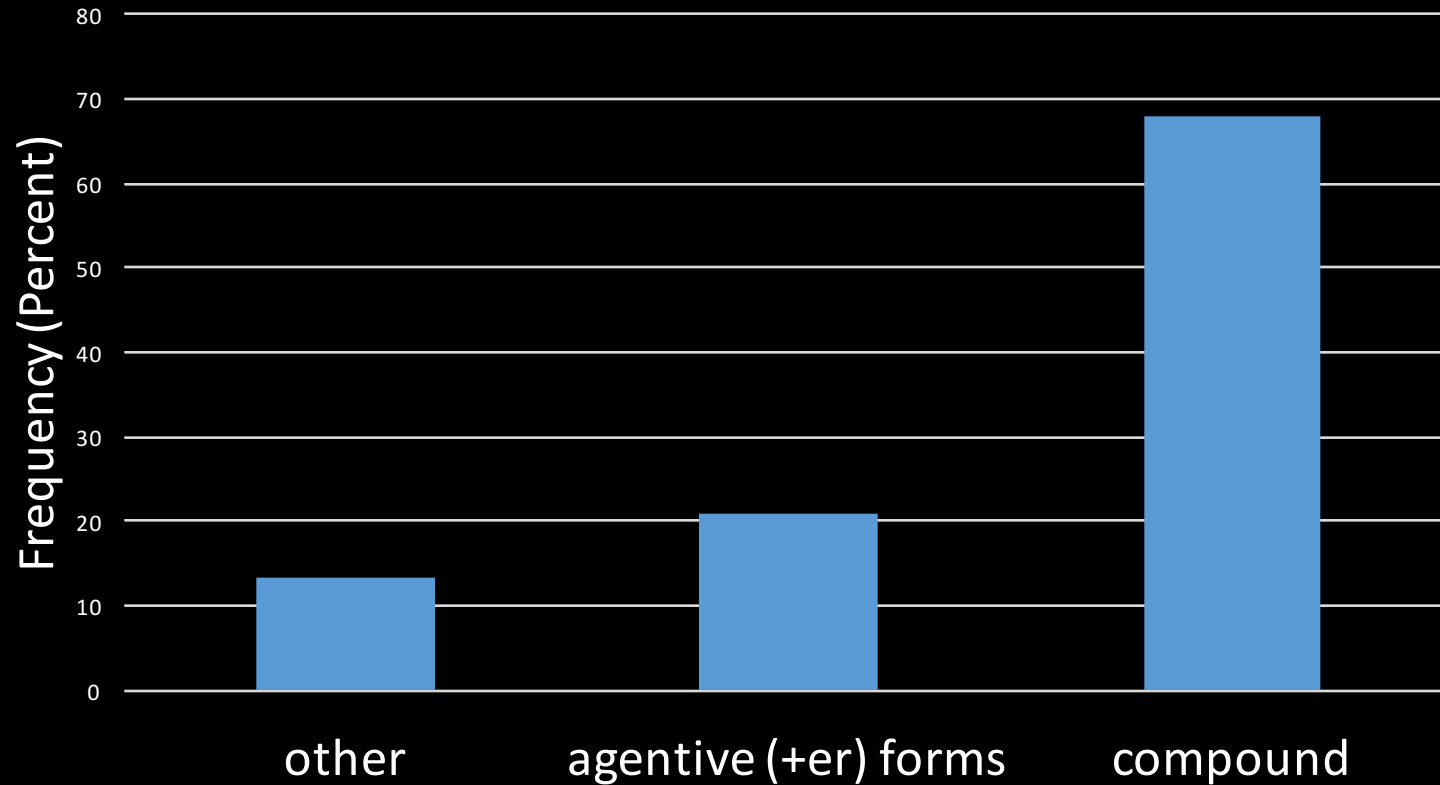
Monosyllabic vs. polysyllabic forms



Type	Percent
monosyllabic	92%
polysyllabic	8%

Distribution in the lexicon

Distribution of polysyllabic forms



Type	Percent
other	13%
agentive	21%
compound	68%

Sub-patterns in polysyllabic forms

- Two sub-regular patterns:
 - Two patterns within the movement parameter comprise 71% (22/31) of the non-compound forms
- Restricted distributional tendencies in:
 - Selected fingers
 - Number of syllables

Sub-patterns in polysyllabic forms

- Sub-patterns:
 - **Type A:** circle movement + straight movement
 - **Type B:** straight movement + repeated tap (or nod) movement

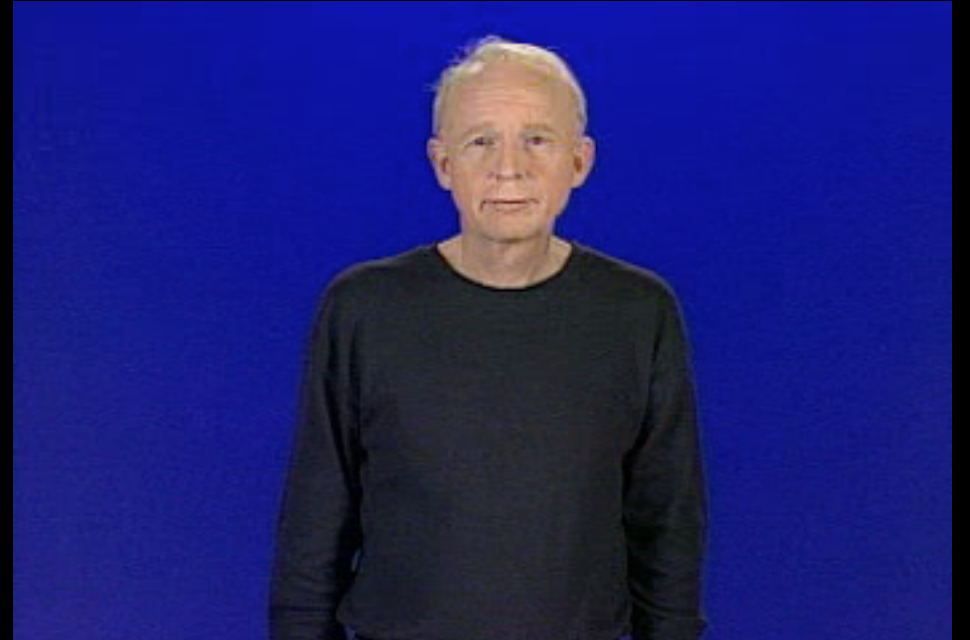
Sub-patterns in polysyllabic forms

- Type A:
 - Circle movement + straight movement
 - Comprises 42% of the forms under consideration
 - Appears in both one-handed and two-handed forms

Examples: Type A



TIE



APPOINTMENT

Sub-patterns in polysyllabic forms

- Type B:
 - Straight movement + repeated tap (or nod) movement
 - Comprises 29% of the forms under consideration
 - All Type B signs begin with contact with the body

Example: Type B

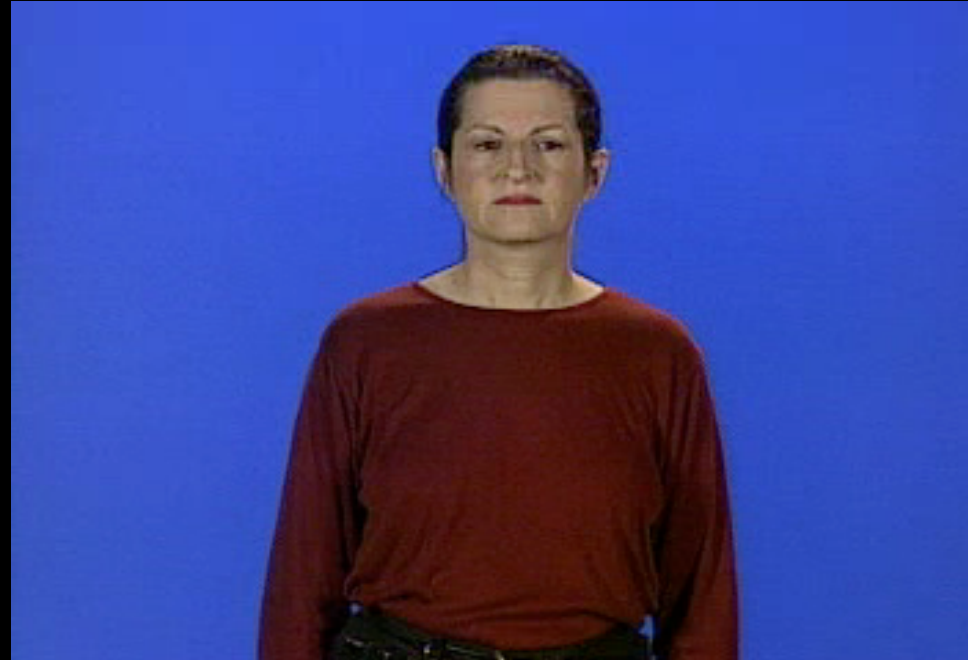


SPANISH



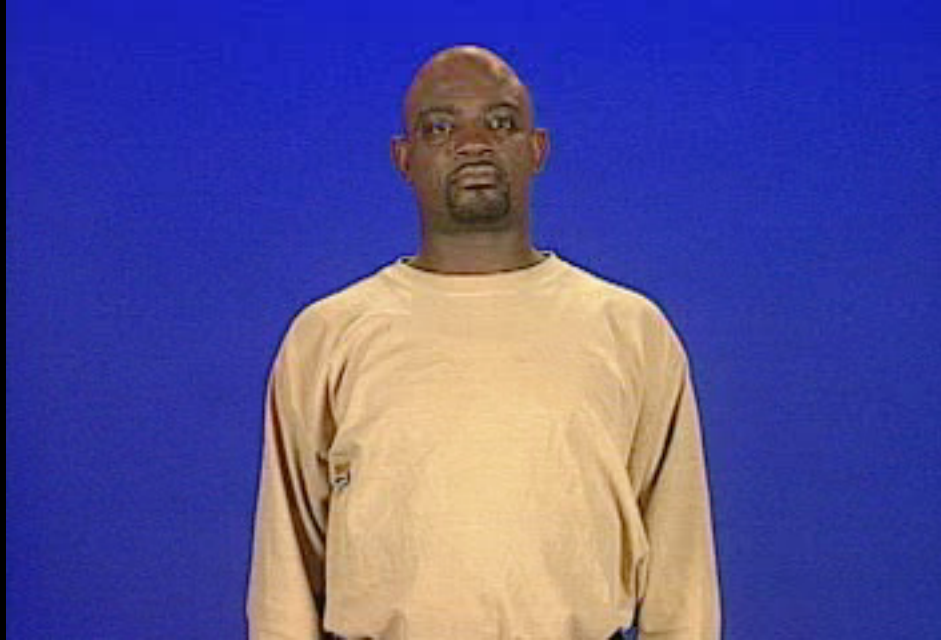
WITCH

Example: Type B continued



LICK

Remaining items



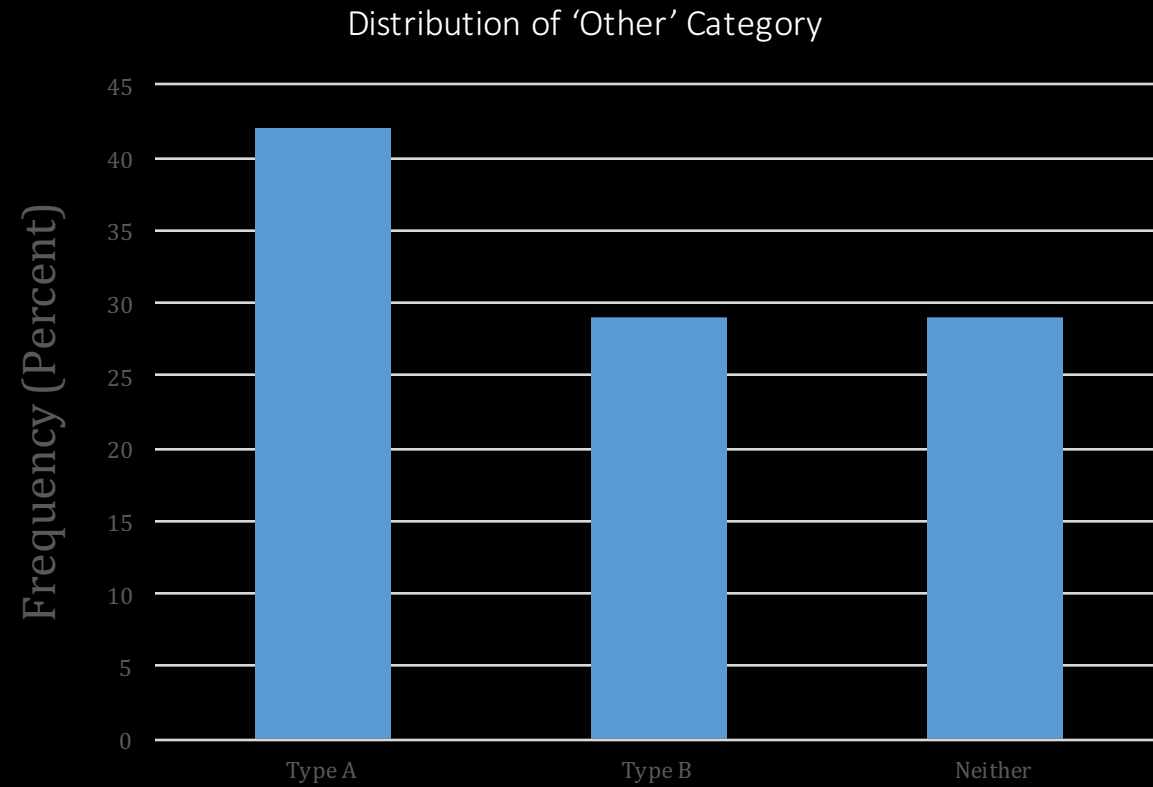
BUCKET



GAMBLE

- Most morphologically complex, highly iconic, based in classifier constructions

Distribution of 'Other' Category



Additional distributional tendencies:

- Most (97%) of forms have either:
 - i. no change in aperture (65%)
 - ii. an aperture change within the same selected finger group (32%)

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Additional distributional tendencies:

- Most (97%) of forms have either :
 - i. no change in aperture (65%)
 - ii. an aperture change within the same selected finger group (32%)
- All forms limited to two distinct syllables
- No forms violated the *straight+circle constraint

Analysis: Type A and B

- ‘Other’ category shows tendencies towards two types of movement patterns, although not all forms fit into these groups.
- Perhaps driven by a pressure towards perceptual distinctiveness.

Analysis: Remaining items

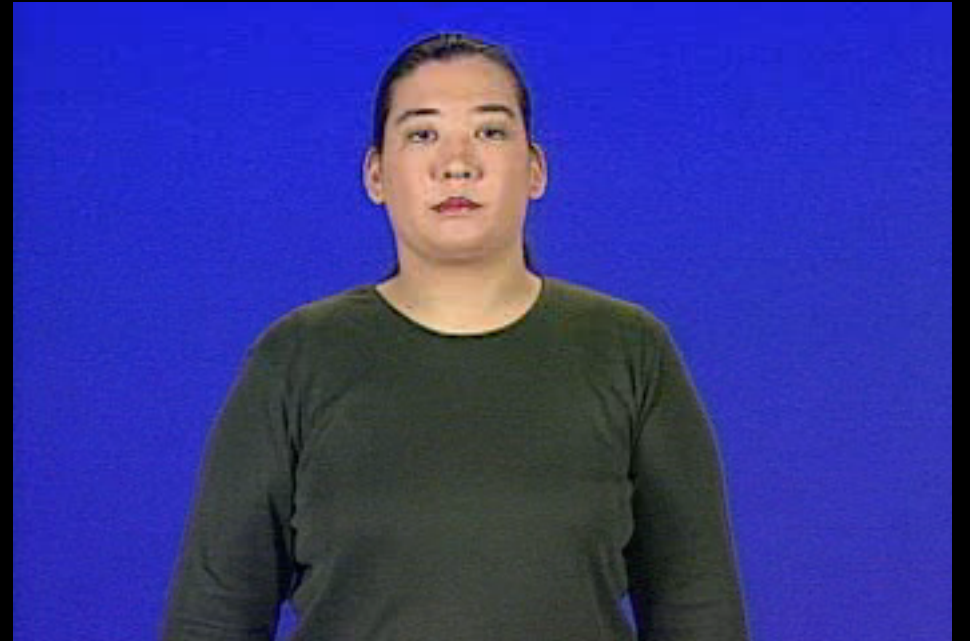
- Signs outside of the Type A/B categorization largely comprise classifier-derived constructions (8/9)
- Iconicity and morphological complexity may be contributing to the increased complexity in the lexical items that did not fit into the proposed classification.

Comparison with compounds

- Compounds do not appear to be as strictly constrained in form.

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- Compounds do not appear to be as strictly constrained in form:
 - Ex. violation of *straight+circle



SOUTH AFRICA

Comparison with compounds

- Compounds do not appear to be as constrained in form.
- Compounds not necessarily limited to two syllables (ex. DESERT)

Comparison with compounds

- Example: DESERT



DRY + transition movement + AREA

Conclusions (1/2)

- Sub-regularities and distinct distributions within the non-compound set separate it from compounds in the ASL Lexicon.
- Within the non-compound forms two distinct subgroups comprise the majority of the data within this subset

Conclusions (2/2)

- Existence of these sub-regularities further supports the analysis of edge cases.
- While not representative of the whole lexicon, these potentially provide additional insights into the pressures that shape sign languages.

Future work

- Dataset does not include all attested polysyllabic forms.
 - Example: [MAGIC](#)
 - Further examination of additional polysyllabic signs will reveal whether the trends identified hold

Thank you to....

- Project advisor Diane Brentari
- Goldin-Meadow Lab Homesign Group

References

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