

Usage-based grammar and sociolinguistics: Evidence from sign languages



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Overview

- Background
- Evidence
 - Phonological variation and change: The reducing effect of high-token frequency
 - Syntactic variation: structural priming
 - Morphological variation and change: frequency effects and analogy
- Conclusion



Background

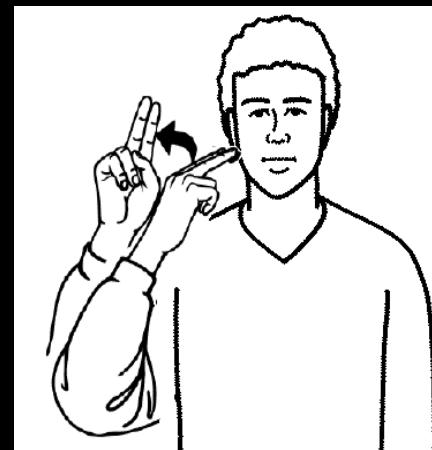
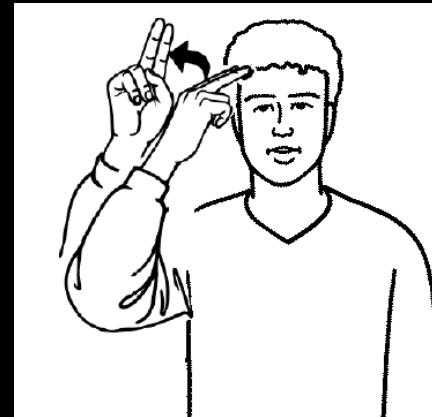
- ‘Usage-based theory takes language to be an embodied and social human behavior and seeks explanations in that context. As the name indicates, this theoretical perspective incorporates the basic insight that usage has an effect on linguistic structure...usage patterns, frequency of occurrence, variation, and change are all taken to provide direct evidence about cognitive representation. No relevant methods for gaining evidence about language are excluded...’ (Bybee & Beckner, 2010)

Background

- In this paper, I revisit a number of findings on variation in specific phonological, morphological, and syntactic features in Auslan (Australian Sign Language) and British Sign Language (BSL) that provide some support for usage-based theories of language (Bybee, 2007)
- Data from variation and change in signed languages has not often been included as empirical evidence for this particular theoretical approach.

Location variation (Schembri et al., 2009)

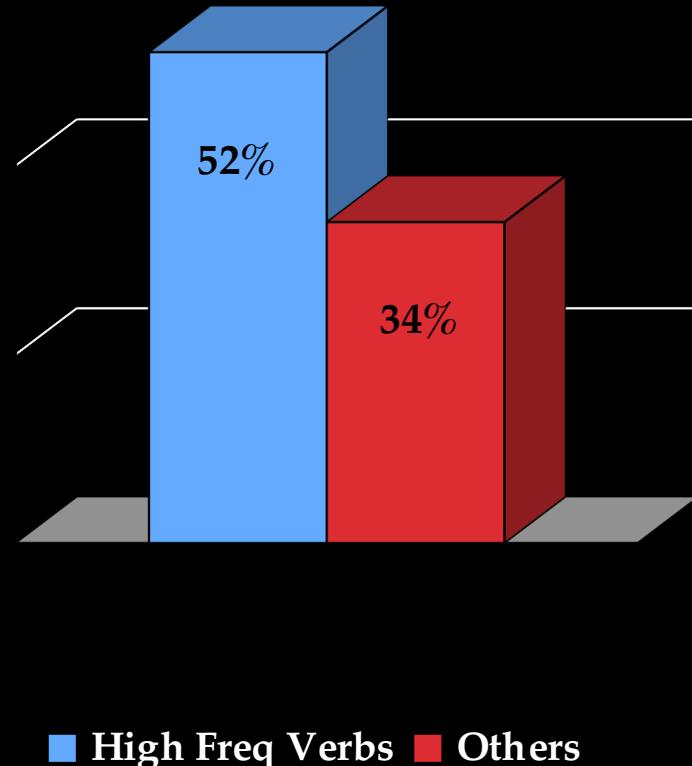
- Variation in the location of Auslan & NZSL signs that are produced at or near the forehead (e.g., THINK, NAME, YELLOW)
- Citation form (+cf) at forehead, but may be at the cheek, jaw or in the space in front of the signer's body (-cf) due to co-articulation/assimilation effects with the location of surrounding signs



NAME

Location variation (Schembri et al., 2009)

- Data: 205 participants, 2667 tokens: 1480 (55%) +cf, 1187 (45%) –cf
- Coded to test possible effects of linguistic and social factors
- Higher frequency verbs favour lowered variants (-cf)
 - e.g., THINK, KNOW, NOT-KNOW, REMEMBER, UNDERSTAND, WONDER, LEARN, FORGET
- All nouns/adjectives and low freq. verbs favour citation forms (+cf)



Hand configuration variation (Fenlon et al., 2013)

- Variation in the hand configuration (handshape and orientation) in signs made with the 1 handshape in BSL conversations due to coarticulation/assimilation with handshapes of the surrounding signs
- Citation form (+cf) with an extended index, but variation involving extension of other fingers also possible (-cf): to the left we see THINK and PT: DEM have pinky extension due to the influence of BAD.



THINK



BAD

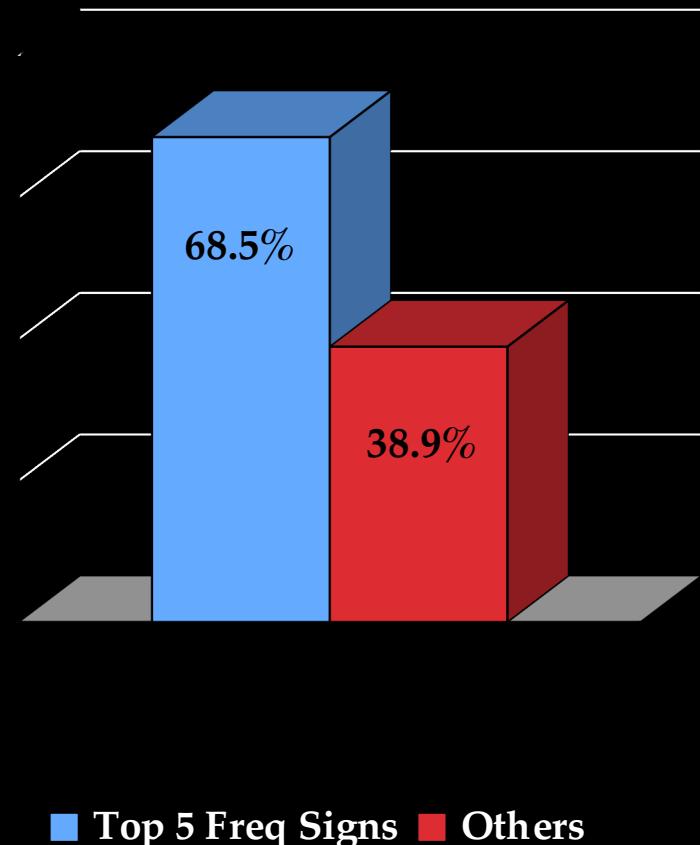


PT: DEM

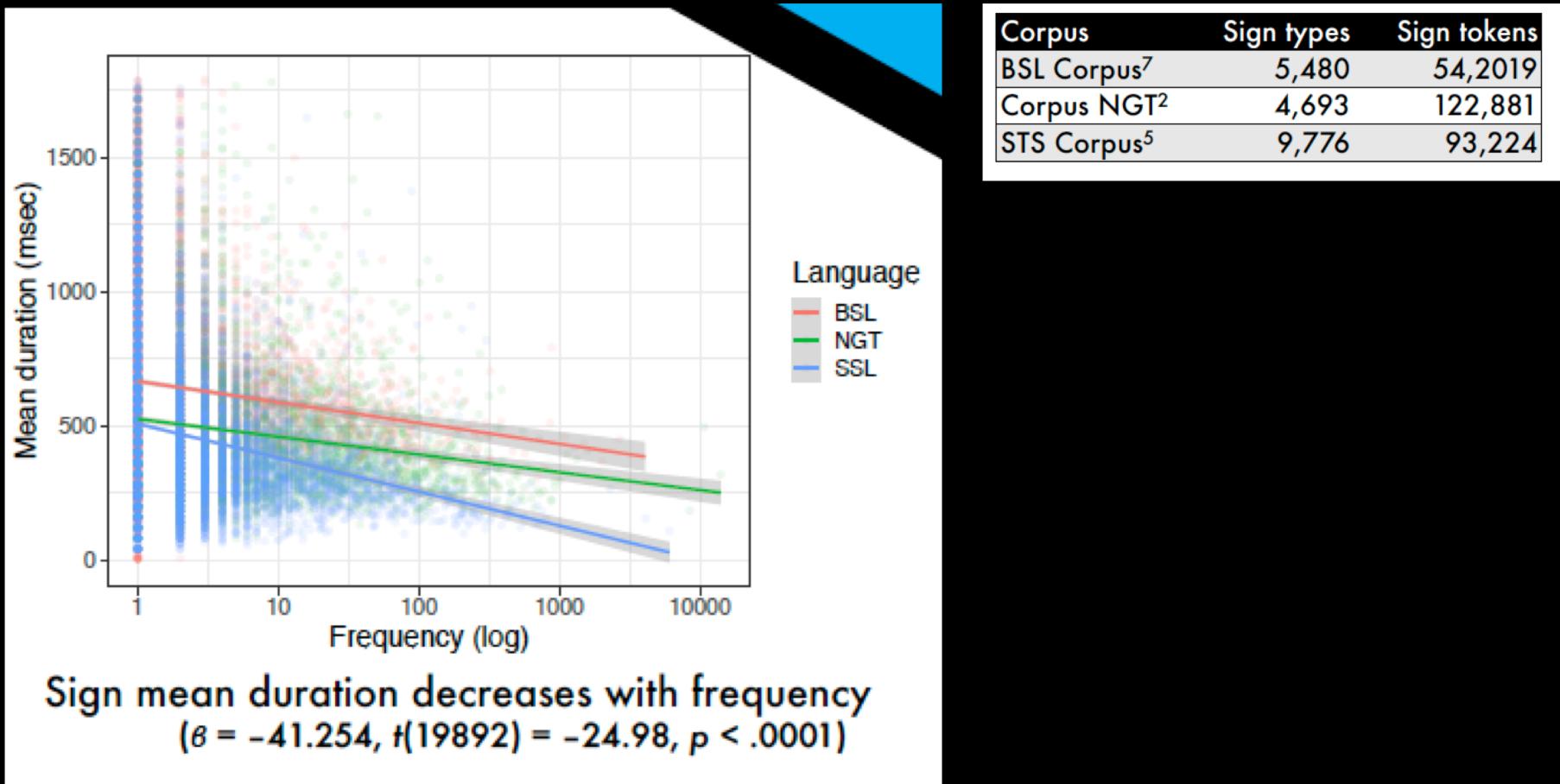
'I think that's bad'

Handshape variation (Fenlon et al., 2013)

- Data: 100 participants, 2084 tokens: 959 (46%) +cf, 1127 (54%) –cf
- Coded to test possible effects of linguistic and social factors
- Most frequent 5 signs favour –cf variants:
 - e.g., 1SG, 3SG, 2SG, DET and LOC



Frequency and duration across three sign language corpora (Börstell et al., 2019)

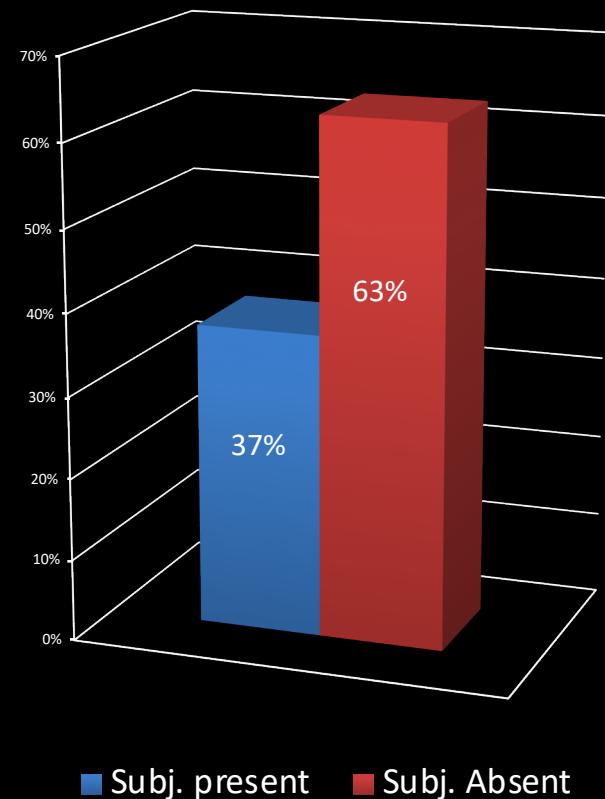


The reducing effect of high token frequency

- Frequency strengthens memory representation for lexical items.
- Experimental studies have shown that participants respond to tasks involving high frequency lexical items more quickly than to tasks involving low frequency words (Bybee, 2007).
- Thus, recognition of high frequency signs may occur more quickly, resulting in less need to produce phonologically fuller forms

Variable ‘subject’ expression in Auslan (McKee et al., 2011)

- Aim: what linguistic and social factors influence variation in the overt expression of subject arguments in Auslan?
- Data: 977 clauses in Auslan, from 20 spontaneous narratives produced by 20 participants
- ‘Subject’ NPs were absent in 63% of Auslan clauses



Structural priming (McKee et al., 2011)

- An analysis using only clauses with subjects co-referent with the subject of the previous clause ($n = 402$) showed that short-term structural priming was an important factor.
- Clauses with absent subject NPs tended to follow other clause with absent subject NPs, and those with subject NPs present tended to follow those with the same structure in both the Auslan and NZSL data.
- PRO-3 BEST, PRO-3 BEST PRO-3 ‘She was the best, she was the best, she was’

Structural priming of variable subject & usage-based grammar

- First study to demonstrate effects of short-term structural priming in spontaneous sign language data
- General explanation: both constructions with subject NPs and with absent subject NPs are activated as they are used in the discourse and for a period after use, making them easier to access

Structural priming of variable subject & usage-based grammar

- As Travis (2007) explains, this “...demonstrates that each clause is not constructed independently, but is patterned on the preceding discourse. It suggests that speakers orient to structures that occurred previously in the discourse and use them as partial models on which to base the morpho-syntax of subsequent utterances. This supports a model of grammar as emerging through discourse rather than an abstract entity fully contained in the mind of speakers and accessed independently for each utterance”

Plain vs. indicating verbs

- Verb signs in Auslan and BSL (and other sign languages) may be fixed in form (known as *plain verbs*) or may show alternations in their initial and/or final location and/or orientation (known as *indicating* or *directional verbs*) to signal associations with the arguments of the verb (e.g., to reflect an association with the agent and/or patient argument)



WANT



PAY

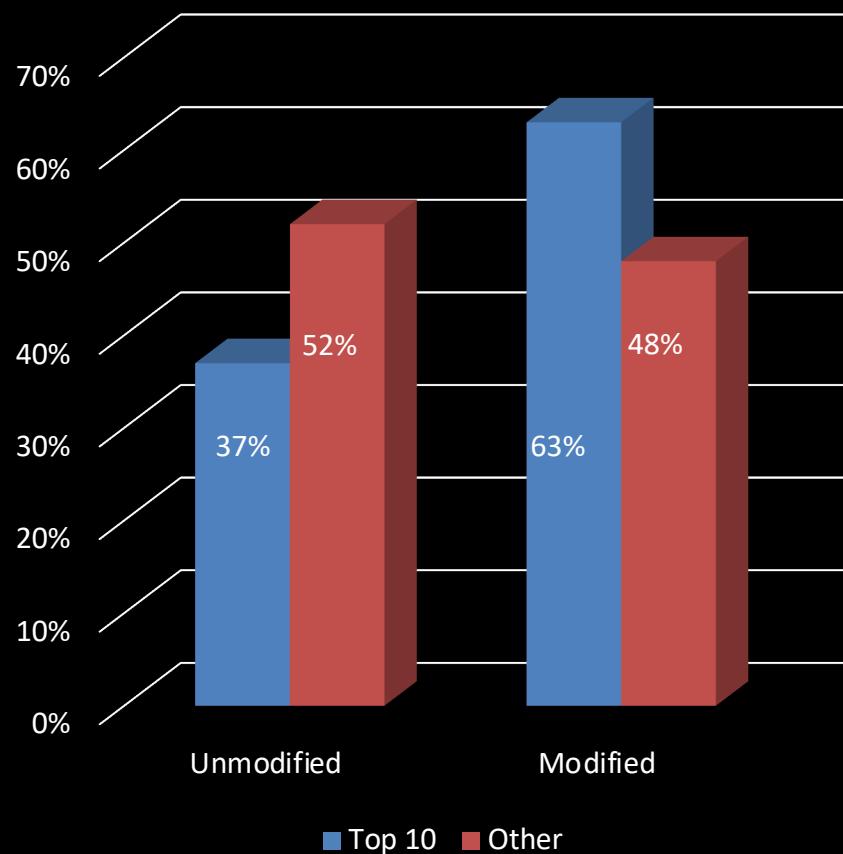


NOT-KNOW



Auslan indicating verb variation (de Beuzeville et al., 2009)

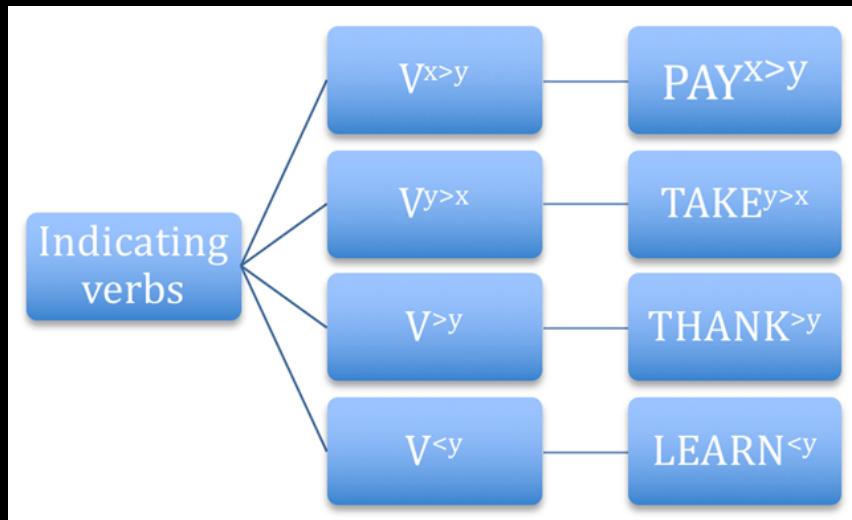
- Data: 45 participants, 1537 verb tokens: 845 (55%) modified, 692 (45%) unmodified
- Top ten most frequent indicating verbs more likely to show modification than other verbs



Frequency and indicating verbs

- It seems that frequency effects have a bearing on the modification of indicating verb signs.
- Bybee (2007) suggests that increased frequency of a lexical item means that individual variants of a form begin to attain greater autonomy as they weaken or lose their association with other instances of the same item.
- Thus, the contexts for use of different spatially modified forms of an indicating verb might grow in proportion to its frequency of use.

Frequency, analogy, and indicating verbs



- Indicating verbs exist in schematic form as well as substantive atomic constructions, that is, individual signs with idiosyncratic properties (Schembri et al., 2018)
- $V^{x>y}$ verbs are amongst the most frequent construction type in BSL (Fenlon et al., 2014): LOOK, GO-TO, GIVE all in top 100 most frequent signs

Frequency, analogy, and indicating verbs



LOOK^{x>y}



TEXT^{x>y}

- Another sign in this category – one that has only emerged over the last two decades – would be TEXT^{x>y},
- The new indicating verb emerges by analogy with frequent existing constructional schemas (cf., Lepic & Occhino, 2018).

Conclusion

- Quantitative studies in the variationist tradition, although initially intended to understand how social factors interact with phonology and grammar, also provide appropriate evidence for the study of variation and change within a usage-based framework.
- In this presentation, I have brought together phonological, morphological and syntactic data which extends the evidence for usage-based grammar to a number of sign languages, particularly Auslan and BSL.

References

- Börstell, Carl, Onno Crasborn & Adam Schembri. 2019. Signs of reduction: Frequency, duration, and signing rate in three sign language corpora. *Theoretical Issues in Sign Language Research* 13 (TISLR 13). University of Hamburg, Germany.
- Bybee, J. (2007). *Frequency of use and the organization of language*. Oxford: Oxford University Press.
- Bybee, J. L., & Beckner, C. (2010). Usage-based theory. In *The Oxford Handbook of Linguistic Analysis*. DOI: 10.1093/oxfordhb/9780199677078.013.0032
- De Beuzeville, L., Johnston, T. & Schembri, A. (2009). The use of space with indicating verbs in Australian Sign Language: A corpus-based investigation. *Sign Language & Linguistics* 12(1), 53-82.
- Fenlon, J., Schembri, A. & Cormier, K. (2018). Modification of indicating verbs in British Sign Language: A corpus-based study. *Language* 94(1), 84-118.
- Fenlon, J., Schembri, A., Rentelis, R., & Cormier, K. (2013). Variation in handshape and orientation in British Sign Language: The case of the '1' hand configuration. *Language and Communication* 33(1), 69-91.
- Fenlon, J., Schembri, A., Rentelis, R., Vinson, D. & Cormier, K. (2014). Using conversational data to determine lexical frequency in British Sign Language: The influence of text type. *Lingua* 143, 187-202.
- Lepic, R., & Occhino, C. (2018). A Construction Morphology approach to sign language analysis. In G. Booij (Ed.), *The Construction of Words* (Vol. 4, pp. 141–172). Springer.
- McKee, R., Schembri, A., McKee, D., & Johnston, T. (2011). Variable subject expression in Australian Sign Language and New Zealand Sign Language. *Language Variation and Change* 23(3), 1-24.
- Schembri, A., Cormier, K., & Fenlon, J. (2018). Indicating verbs as typologically unique constructions: Reconsidering verb 'agreement' in sign languages. *Glossa* 3(1), 89.
- Schembri, A., McKee, D., McKee, R., Johnston, T., Goswell, D. & Pivac, S. (2009). Phonological variation and change in Australian and New Zealand Sign Languages: The location variable. *Language Variation and Change* 21(2), 193-231.
- Travis, C. E. (2007). Genre effects on subject expression in Spanish: Priming in narrative and conversation. *Language Variation and Change*, 19(2), 101-135.