

ASL-English Semantically Mismatched Code Blends

An Analysis of Motivations for Nonequivalent Blending

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CODAs

- A CODA is a Child of a Deaf Adult
- CODAs in America are essentially the only individuals who grow up natively communicating with English and ASL
- Deaf individuals may become fluent bilinguals, but are unbalanced due to the fact that they cannot hear spoken English

Code Switching vs. Code Blending

- For spoken language bilinguals, code switching involves sequential shifts between the two languages
- For signed language/spoken language bilinguals, simultaneous production of speech and sign can occur
- This unique ability lends itself to a more accurate label of "code blending" for signed language/spoken language bilinguals

Types of Code Blends

- Baker and Van den Bogaerde (2008) Identified 4 main types of code blends between Dutch and NGT (Dutch Sign Language):
 - Dutch BL code blend (entirely in words, signs do not provide additional meaning)
 - NGT BL code blend (entirely in signs, words do not provide additional meaning)
 - Code-blended mixed (both signs and words are necessary to understand full meaning)
 - Code-blended full (full meaning is expressed in both modalities)
- These categories have been generalized to other languages, including English and ASL

New Types of Code Blends

- Bishop (2010) performed a study observing the conversations of English/ASL bilingual CODAs - and posited 2 additional types of blends: elaborative and **evaluative**
- Evaluative code blends involve a semantic mismatch between what is spoken and what is signed. These are English-BL blends (the most common type).
- Hypothesis from Bishop 2010: the content that is signed is adding an evaluative component to the content that is spoken; signing "true feelings"

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The Problem: A Weak Hypothesis

There is no quantifiable evidence given for the claim made by Bishop (2010) that evaluative code blends - which involve semantically nonequivalent signs and spoken words - are caused by the speaker's intent to add an attitudinal component to their utterance

- No other alternatives are explored in this study. In fact, only two examples of the phenomenon are provided
- The article notes that further research needs to be done on this topic

Other Possible Motivations for Mismatched Blends?

In both of the mismatched ("evaluative") code blends in Bishop (2010) article, chosen signs required less time and/or less manual effort than the translation equivalent of the spoken word

- 1. Spoken: "She is college educated" | Signed: " –SMART"
- 2. Spoken: "Ten years ago" | Signed "PAST" (with proper facial expressions indicating "LONG-TIME-PAST"
- My Hypothesis: "Economy of Production" may be a factor in nonequivalent blending, involving effects from elements such as:
 - Number of signs or movements required
 - Frequency of signs
 - Actual length of production time

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Previous Code Blend Studies

Very few studies have been conducted specifically to examine ASL-English code blending, and even less have dealt with the issue of motivation.

- Emmorey and Borinstein (2005) was the first study to examine ASL-English code blending among *adult* CODAs
- This study concluded that in English/ASL blends, verbs are the most likely category to be blended, and blends were usually semantic equivalents or at least closely related
- This study also noted the fact that blending was more likely to occur when bilinguals were speaking to other bilinguals (nearly a quarter of spoken words in this condition were accompanied by signs)

Oral vs. Manual Production Effort and Timing

Meier (2004), building off of previous work by Bellugi (1972,1979), notes that on a purely biological level, manual articulators move slower than oral articulators.

- However, spoken and signed propositions are still produced at the same rates
- This is because the slow movement of manual articulators encourages simultaneous layering of information in ASL morphology, and discourages sequential affixation

Synchronization of Speech and Co-Speech Gesture/Signs

Emmorey (2012) notes that sign production and speech production are both naturally and automatically highly synchronized when produced simultaneously (possibly due to origins in co-speech gesture)

- In this study, oral production times slowed when produced in conjunction with sign, *and* sign production times were faster when produced with speech than when produced in isolation

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Experimental Protocol

Six native bilingual, adult CODAs agreed to participate in 10-15 minute loosely-guided paired discussions.

- Demographics: 4 female, 2 male. Average age: 22

Discussions initially began in English, and participants were encouraged to communicate however they felt comfortable. Discussions were both audio and visually recorded, with permission.

- Questions centered around participants' involvement and place in the Deaf community, as well as their unique experiences in their upbringing
- These question topics were meant to facilitate use of ASL

Methods Continued

All instances of fully-recognizable code blending were extracted from the recordings and examined.

- Signs were glossed and coded with the simultaneous English and translation equivalents
- I used asl-lex.org to locate average frequencies and signing times
- Note: There were numerous blending instances involving partial or incomplete signs. These were not included in the analysis, because the precise timing and exact signs could not be assessed accurately.

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Data

Between the three conversations, 24 different code blends were extracted.

- Of the 24 code blends, 13 involved signed and spoken translation equivalents, 9 were semantically 'mismatched,' and 2 were ambiguous.

Mismatched Blends

The 9 mismatched code blends can be further categorized:

- 4 of the 9 blends involved the choice of a semantically nonequivalent sign that required **less signed words** to produce than the translation equivalents. The translation equivalents required either 2 or 3 signs, while the chosen sign was a single utterance. Average frequencies of compound signs are not easily accessed.
- Spoken: "After a while" | Signed: "TIME"
- Spoken: "Flip the script" | Signed: "PERSPECTIVE"

Mismatched Blends

3 of the 9 blends involved the choice of a semantically nonequivalent sign that required **less average production time** than the translation equivalents. Also, the average **frequencies** for the 3 chosen signs were also **higher** than those of the translation equivalents.

- Spoken: "A situation **like**" | Signed: "-IF"

Mismatched Blends

The remaining 2 blends involved the choice of semantically nonequivalent signs that required **more time** than the translation equivalents, but the average **frequencies** of the chosen signs were **higher** than those of the translation equivalents.

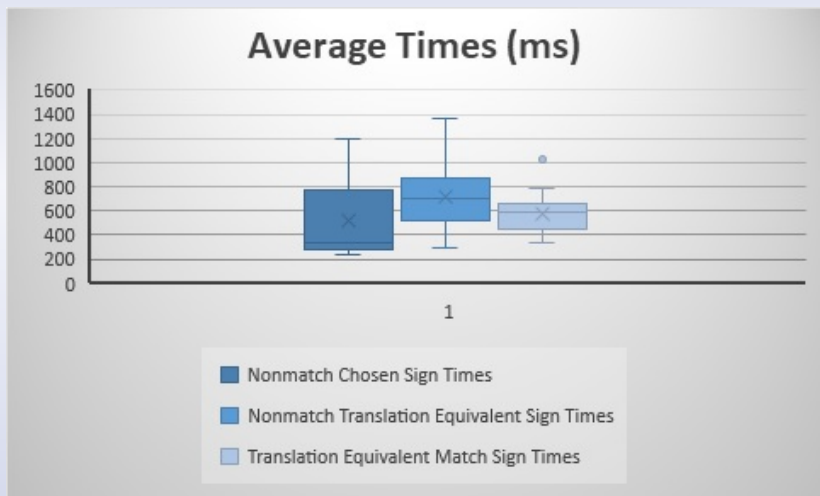
- Spoken: "Late" | Signed: "TIME"

Analysis

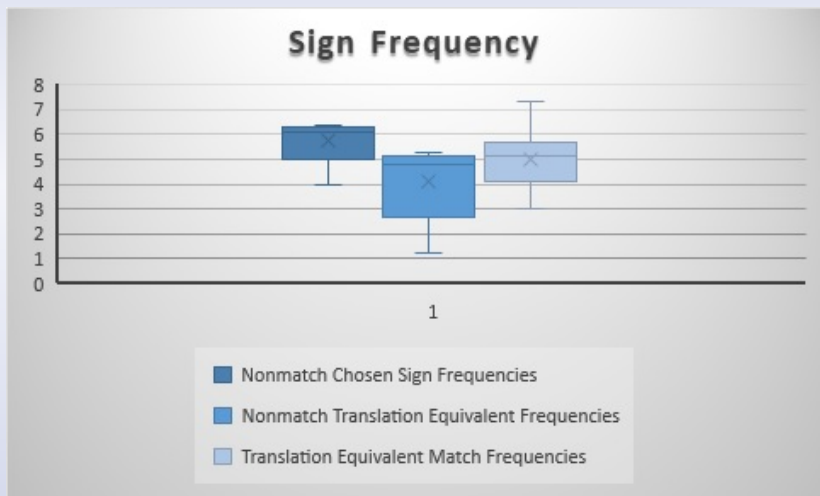
A simple regression analysis revealed a strong colinearity between frequency and time, meaning that the two variables (at least in this small dataset) are too highly correlated for the regression to show the clear effects or weights of both variables.

- Also, for instances of blending where the translation equivalent *was* the chosen sign, there is no way to know what the primary nonmatch option would be to then perform a test for the probability of choosing a translation equivalent versus a nonmatch.
- This issue renders the hypothesis from Bishop (2010) somewhat unfalsifiable

Comparison Average Signing Time



Comparison of Sign Frequency



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The results from the code blending dataset can be summed up in one statement:

- For all instances of nonmatched code blending, participants chose a sign that incorporated one or more of the hypothesized factors that facilitate ease of production (less actual signed words, less signing time, and/or a higher average frequency of occurrence).
- This result is far from conclusive or generalizable, but it has cast doubt on the hypothesis that semantically mismatched code blends are merely evaluative in nature, and hopefully it has indicated the need for further work in this area.

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