Colors on hands: Phonological markedness of sign language color terms

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Introduction

Color Terms in Spoken Language

- Intuitively, people use a few basic color terms, rather than many; color terms are not directly related to the natural colors in the environment.
- Berlin & Kay (1999) hypothesized that they found an implicational hierarchy in the color terms systems of different languages. If a language has a term for a lower ranked color, it also has terms for the higher ranked colors.
- For instance, the vocabulary of a language contains terms for "blue"; it also contains terms for "white", "black", "red", "green", and "yellow".

Sign Language Color Terms

- The few studies on color terms in sign languages (SLs) reveal methodological problems, since the color terms shown are not context-specific or language-specific.
- For example, the presence of a color term corresponds to the prototypical hierarchy.

Research Question & Hypothesis

Is there a correlation between the basicness of a color and the phonological markedness of the corresponding sign?

Hypothesis: Across different stages of the hierarchy in Figure 1, color terms increase in phonological markedness.

If this is true, the lowest major color is ranked on the hierarchy, and the more complex signs for color terms will be.

Methodology

Bootstrapping

- Bootstrapping is used to estimate how sensitive a statistic is for the sample that happened to be selected. It is especially relevant when one only has a small sample from an unknown distribution.
- Bootstrapping creates new "virtual" samples from the original sample, by drawing with replacement from the original sample.
- We used a "bootstrap" method to create virtual samples to see if they are as good as the original sample (see Figure 6).

Results

- Across all sample colors, terms increase in phonological markedness according to the 3 subgroups.
- An analysis of the PMS of all 184 color signs (on a scale of 0-10) yields PMS scores between 0.4 and 0.6.
- Remarkably, across all the color signs for "red" are exceptional in that it is almost all SLs, with a phonologically less marked than "blue" or "black".
- In Cutlade SL, the score for red is 0.71 (sign and score very similar to Figure 2), while white has a PMS of 0.63 and on color at 3.21.
- Possible explanation for the deviant behavior of red: one of the pointing signs.

Further Research

- Is this a general phenomenon, or is it unique to this language?
- Further research could involve looking at other color systems and seeing if there are any patterns.

Discussion & Conclusion

The 'basicness' of a color term is reflected in the phonological markedness of the corresponding color sign: PMS increases as color terms become 'less basic'.