Does Language Influence Our Thoughts?

The Sapir-Whorf Hypothesis (Linguistic Relativity): Group 9 Part 4: Exam Questions

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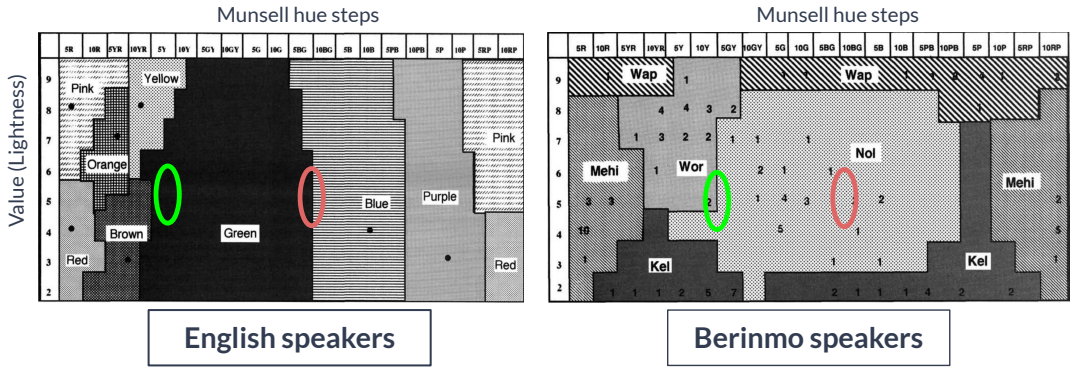
Brief Study Review

- **BPQ:** How does language shape human perception of color and, more broadly, influence how people think about and categorize the world around them?
- **MRQ:** Are there differences between English and Berinmo/Himba in the proportion of correct answers in the within versus across category conditions for their specific language?
- Study primarily examines differences between how native speakers of English, Berinmo, and Himba characterise colors in a series of tests.
- Berinmo and Himba are 5-color primary languages, while English is a 9-color primary language.

Color Boundaries



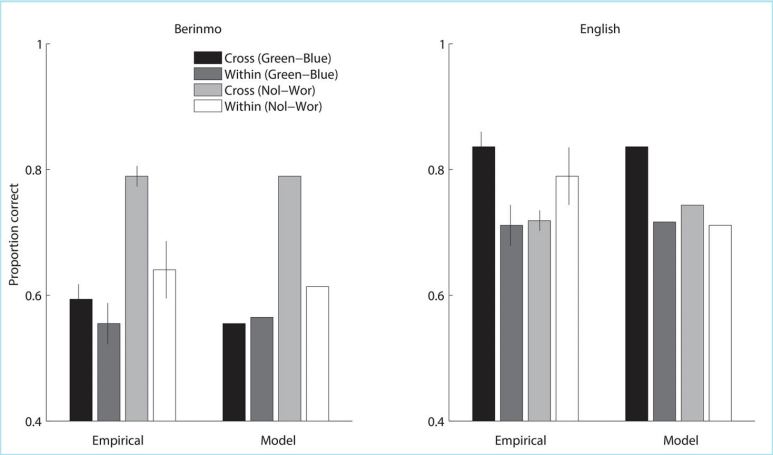
Experimental Design

5 seconds

30 second pause

Figures from Roberson et al. (2000), pg. 372-373

Parsing the Data Graphic



Berinmo Legend:

- Black: Different color categories in English
- Dark Grey: Same color categories in English
- Light Grey: Different color categories in Berinmo
- White: Same color categories in Berinmo

- The height of each bar represents the proportion of correct responses

X-Axis

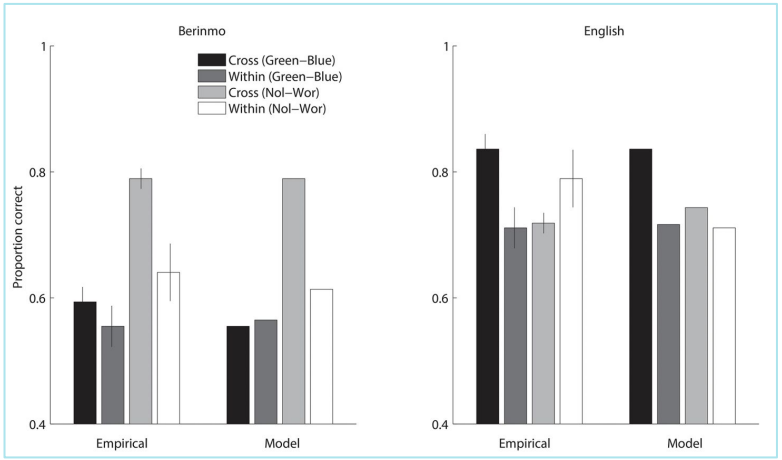
- Empirical responses describes the participant's experimental performances
- Model responses predictions based on a probabilistic model derived from the empirical findings

Y-Axis

- Scales from a chance level performance (0.4) to a perfect performance (1.0). Represents how accurately participants discriminated between the colors in the experiment.

(Cibelli et al, 2016: 12)

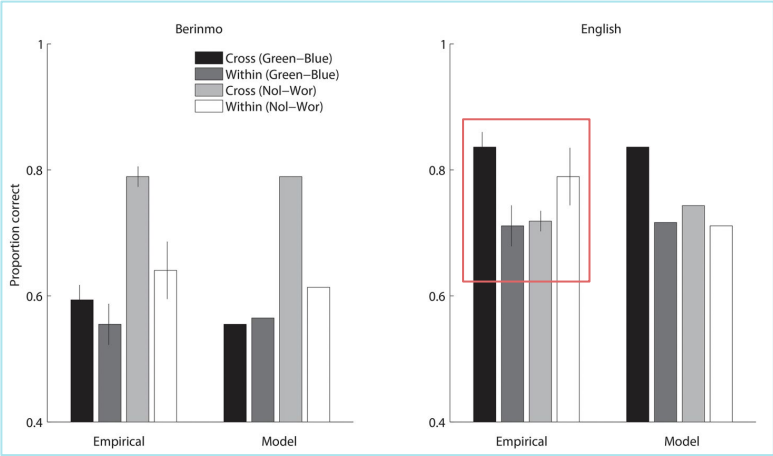
Question 1: Data Interpretation



Do native speakers perform better when color samples cross a linguistic boundary in their own language? Specifically, how do English speakers' performances differ when tested on English color categories (green–blue) versus Berinmo color categories (nol–wor)?

(Cibelli et al, 2016: 12)

Question 1 Answer



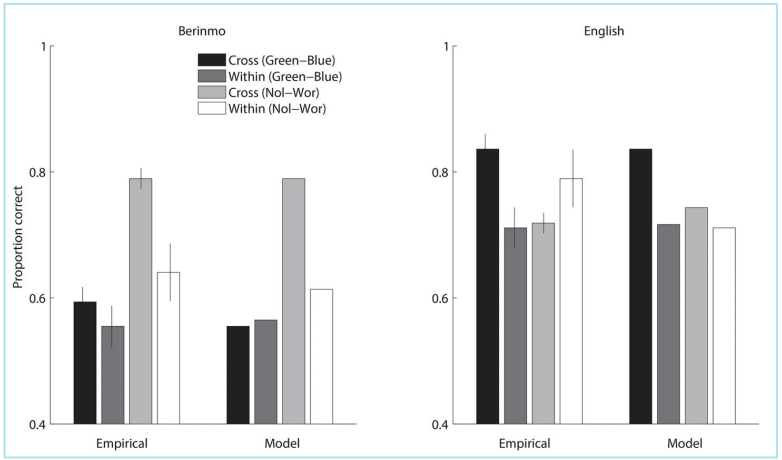
(Cibelli et al, 2016: 12)

Do native speakers perform better when color samples cross a linguistic boundary in their own language?

- Speakers tend to perform better when faced with target colors crossing linguistic categories in their native language vs the foreign language.
- Berinmo speakers have a higher accuracy in both tests concerning Berinmo words, as opposed to any test involving English words.
- The same can not be concluded for the English group of native speakers. Due to the overlap in the error bars, we cannot state that a significant difference has been found in the accuracy levels of each different study condition. Therefore, any difference in performance may be attributed to chance.

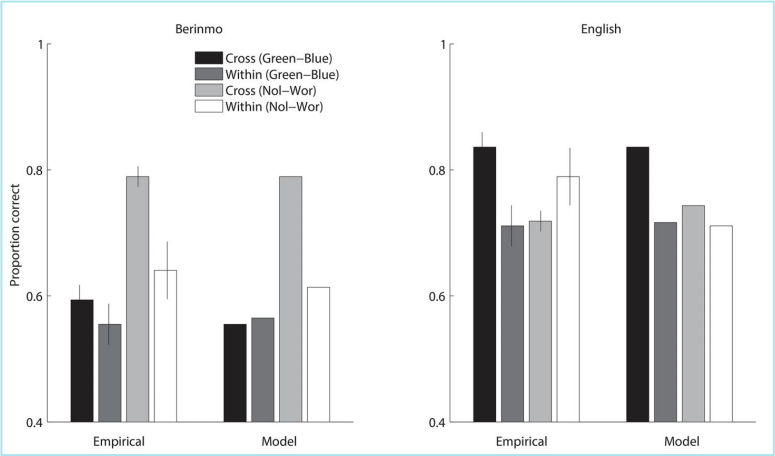
Q2: Connecting our data graphic to the BPQ

Kaplan's Myth: Language limits our thoughts.



What does the varying levels of accurate color perception among different groups of native speakers suggest on the influence of language on thought? What further implications does this have for higher levels of cognition (ex. emotion, critical thinking, judgement)?

Question 2 Answer



(Cibelli et al, 2016: 12)

What does the varying levels of accurate color perception among different groups of native speakers suggest on the influence of language on thought? What further implications does this have for higher levels of cognition (ex. emotion, critical thinking, judgement)?

- As different groups of native speakers respond to the same stimuli in different ways (as seen in their varying accuracy levels), we can conclude that there is some effect that their language has on their ability to correctly perceive and discriminate between color groups.
- This follows the weak variation of the Sapir-Whorf hypothesis, which states that language has the ability to subtly influence perception.
- Kaplan's myth discusses the implication language has on a larger stage, such as language used as a tool to sway voters during election season. However, there is a large difference between color perception and higher levels of cognition. The research presented today can not yet be extended to support that language influences thought on that high of a level.

References

Cibelli, Emily, Yang Xu, Joseph L. Austerweil, Thomas L. Griffiths, Terry Regier. (2016). The Sapir-Whorf hypothesis and probabilistic inference: Evidence from the domain of color. *PLOS ONE*, *11*(8): e0161521. https://doi.org/10.1371/journal.pone.0161521.

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Roberson, Debi, Ian Davies, Jules Davidoff. (2000). Color categories are not universal: Replications and new evidence from a stone-age culture. *Journal of Experimental Psychology: General*, *129*(3), 369-398. https://doi.org/10.1037/0096-3445.129.3.369.

Roberson, Debi, Jules B. Davidoff, Ian R.L. Davies, Laura R. Shapiro. Color categories: Evidence for the cultural relativity hypothesis. *Cognitive Psychology*, *50*(4), 378-411. https://doi.org/10.1016/j.cogpsych.2004.10.001