

# BOUBA OR PUA? HOW SPANISH-ENGLISH FLUENCY SHAPES SOUND SYMBOLISM

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## Introduction

- The bouba-kiki effect describes how people associate certain speech sounds with specific visual shapes, suggesting a natural connection between sound and meaning in human perception.
- Sharp sounds (e.g., /i/, /k/, /t/) are often linked to small, fast, angular shapes.
- Round sounds (e.g., /u/, /o/, /a/, /m/, /l/) are associated with large, smooth, curved shapes.
- There is strong evidence for sound-symbolic effects across languages, with *bouba* eliciting more congruent responses than *kiki*.
- This study examines whether bilingual Spanish-English speakers show similar sound-shape associations to monolingual English speakers.
- Understanding these associations may provide insight into how humans process language, perception, and meaning, and whether these processes are shaped by universal cognitive mechanisms.

## Methods

**Participants:** The participants in this study are bilingual Spanish-English speakers, whose responses will be compared to the same data collected from monolingual English speakers.

**Materials:** The primary materials include pseudowords (made up words) designed to systematically vary in phonetic structure, containing either sharp features (high front vowels like /i/ and stop consonants such as /k/ or /t/) or round features (low back vowels like /u/, /o/, /a/ and sonorant consonants such as /m/ or /l/). The main measure collected was participants' three single-word free associations for each pseudo-word. Responses were later categorized based on whether they reflected sharp (small, fast, angular) or round (large, smooth, curved) conceptual qualities.

**Procedures:** Participants were presented with a series of pseudo-words one at a time. For each word, they were instructed to write three single-word associations that immediately came to mind. The responses were recorded and later analyzed to determine whether the phonetic properties of the pseudo-words systematically influenced the type of associations produced, allowing researchers to assess whether the Bouba-Kiki sound-shape pattern appears in Spanish speakers.

## Results

- We expect participants to demonstrate that language grounding in Spanish acts as a cognitive filter that will either reinforce or inhibit the universal bouba-kiki effect depending on the phonetic-semantic alignment of the pseudowords.
- Furthermore, we hypothesize that participants with high Spanish proficiency will exhibit significantly higher accuracy and faster reaction times when a pseudoword's phonetic structure is congruent with a Spanish semantic anchor.
- We also expect that the participant's knowledge of a second language may have the potential to serve as a tie-breaker in cases of neutral or complex stimuli.

## Discussion

- Results are expected to support the Bouba-Kiki effect, showing consistent associations between sound patterns and conceptual qualities.
- Pseudowords with sharp phonetic features are predicted to be associated with concepts that are small, fast, pointed, or angular.
- Pseudowords with round phonetic features are expected to be associated with concepts that are large, smooth, slow, or curved.
- Spanish-English bilinguals may show different associations when pseudowords resemble real words in Spanish.
- Such interlingual homophone effects could demonstrate how a second language influences interpretation of novel sounds.
- Overall, the findings would suggest that both universal sound-symbolic patterns and linguistic background shape how people process new words.

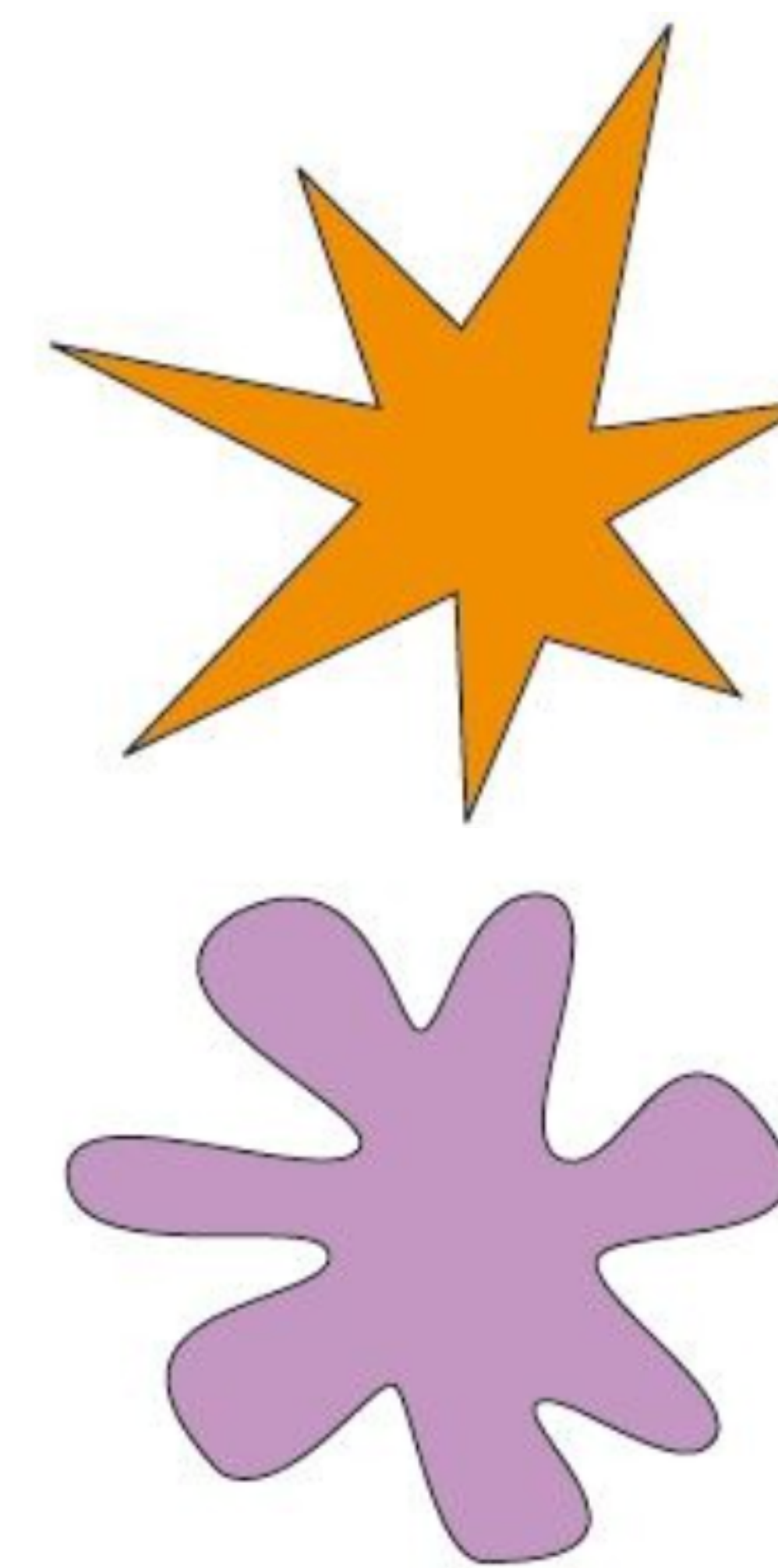
## Data Collection

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Single-word Association 1

Single-word Association 2

Single-word Association 3



## References



## Acknowledgements

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