## Sound Symbolism in Urdu First Names Nazia Mohsin<sup>1</sup>, Yoonjung Kang<sup>2</sup>, Lisa Sullivan<sup>2</sup>

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### 1. Literature Review

- The arbitrary relationship between sound and distinctive attribute of language; individual sc its meaning<sup>[2]</sup>.
- A growing body of literature suggests that the sound-to-meaning relationship is not always arbitrary as previously thought<sup>[3,4]</sup>; individual sounds carry meaning.
- Sound symbolism may extend to speech sounds and patterns of speech sounds associated with gender<sup>[1,5,6]</sup>.

### 2. Research Questions

- 1. Are there differences in the speech sounds and patterns found between male and female Urdu first names?
- 2. Do Urdu speakers actively use these patterns in making judgments on the gender of made-up names?

### 3. Study: Corpus Analysis

Urdu first names were analyzed by gender to identify gender-specific sound patterns.

### Method

- 200 names (f=100) were collected from native speaker elicitations and baby name websites.
- 6 variables were investigated (Table 1)

### Results

- Male names were shorter in length of sounds and syllables, contained back vowels and heavy syllables.
- Female names were longer in length of sounds and syllables, contained front vowels and sonorants.
- Most trends were in line with previous findings suggesting that across languages, individuals are making associations between certain sounds and gender.

### **Acknowledgements and References**

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ounds present in a word are not symbolic of

Variable	Result	Statistical Significance
Length of name by number of sounds	Female names were longer	NO
Length of name by number of syllables	Female names were longer	YES
Vowels produced at the front vs. back of the mouth	Male names contained more vowels produced at the back of the mouth	NO
Stress placement on syllable	Male names had stress on the first syllable	NO
Presence of sonorants (consonants produced with continuous airflow such as "n", "r", "w" or "I")	Female names contained more sonorants	YES
Syllable weight (A syllable that ends in a consonant or contains a long vowel is a "heavy syllable")	Male names had heavy syllables	YES

Results of Variables Examined in Corpus Analysis of Urdu First Names

• Participants were asked to rate on a 6-point scale how male-like or female-like the names sounded.

- Only sounds found in Urdu were used.

### Results

# 5. Discussion

### 4. Experiment: Name Gendering Task

• 36 adult native Urdu speakers participated in an online experiment to examine if Urdu speakers actively use patterns in making judgments on gender.

- 2 factors were investigated: 1) sonorants 2) vowels
- 40 stimuli (pseudo names; 20 pairs, 10 per factor) were presented aurally (Figure 1).

### Method

- Names were randomly generated on R (Table 2).
- Any sequences that resembled existing Urdu words were deleted.
  - Based on the findings from the corpus analysis, factors were manipulated to sound male-like or female-like.
- A native Urdu speaker recorded the stimuli.

• Participants, on average, rated names biased to sound male-like as more male (M=3.87, SD=1.67; Figure 2) than names biased to sound female-like (M=3.52, SD=1.78). Difference between ratings by gender bias for the vowel factor was statistically significant (p< 0.01).

• The effect for the sonorant factor was not statistically significant.

There are speech sounds and patterns that correlate to gender in Urdu first names and speakers actively use these patterns to make judgments on gender. Similar patterns are emerging across languages, including Urdu.

### Implications:

- This study reveals that there is a non-arbitrary connection between sound and meaning. • This study challenges our current understanding of the fundamental nature of human language.
- Sound symbolic associations may extend beyond gender; potential to explore other associations (ie. between sound and lightness vs. darkness, sound and sharpness vs. dullness) • This study promotes University of Toronto's Strategic Research Plan:
  - **BUILD**: Recognition of diverse speaker populations within communities facilitates engagement among community members. Research on Urdu sheds light on a linguistic profile of a large Canadian demographic.
  - **ENGAGE**: Understand the fundamental structure of language and our perception of speech.





Eactor	Male-biased	Female-biased
Factor	name	name
sonorant	bɛkuː	mεkuː
sonorant	zeːkiː	jeːkiː
vowel	koːĥoː	keːĥeː
vowel	<u>t</u> uːbuː	<u>t</u> iːbiː

Table 2. Stimuli (written in the International Phonetic Alphabet) use in the experiment.

