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Research Proposal

Measuring Gender Bias and its Link to Sound Symbolism in Name Gender

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Abstract

This research investigates whether individual-level gender bias predicts sound-symbolic gender judgments in unfamiliar names — specifically, whether individuals with stronger gender biases rely more heavily on phonological features such as vowel frontness and consonant sonority when assigning gender to pseudo-names. The project connects established sound symbolism research with social science methodology on gender norm measurement.

The central contribution is a validated individual-level adaptation of the UNDP Gender Social Norms Index (GSNI). Drawing on Bicchieri's distinction between personal normative beliefs and perceived social expectations, the instrument captures both dimensions — addressing key limitations of existing country-level measures. The study follows a two-phase design: instrument development and pilot testing in London, followed by online data collection in Toronto via the University of Toronto and Prolific. Findings will be analysed to assess whether gender bias scores predict sound-symbolic judgments, and whether linguistic background, age, and cultural upbringing moderate observed patterns.

Introduction

Growing up speaking Hindi, I instinctively assigned gender to words and names — a habit that persisted even after learning English. This drew my attention to how language encodes social expectations, and eventually to a question that sits at the intersection of linguistics and social science: do individuals with stronger gender biases apply gendered sound stereotypes more consistently when judging unfamiliar names?

Linguistic research shows that phonological features are systematically associated with perceived femininity or masculinity across languages (Hinton et al., 1994; Sidhu & Pexman, 2019; Kang & Wong, 2019). Social science research shows that gender biases shape social cognition broadly (UNDP, 2023). Yet no study has examined whether individual variation in gender bias moderates sound-symbolic name judgments — a gap this project directly addresses. The achievable goals are to develop a validated individual-level gender bias instrument, test whether it predicts sound-symbolic judgments, and produce findings suitable for conference dissemination.

Research Objectives & Questions

Primary Objective

To investigate whether individual gender bias is associated with stronger or more consistent sound-symbolic gender judgments in names, across a linguistically and demographically diverse English-speaking participant pool.

Secondary Objectives

- Develop and validate an individual-level adaptation of the UNDP Gender Social Norms Index (GSNI), in collaboration with Dr. Beniamino Cislaghi (LSHTM), capturing both personal normative beliefs and perceived social expectations.
- Assess the feasibility of combining survey-based gender bias measures with experimental phonological perception methods.
- Explore whether linguistic background, multilingualism, age, and cultural upbringing moderate sound-symbolic gender judgments.

Key Research Questions

1. Do individuals with higher gender bias scores show stronger or more consistent gendered interpretations of name sounds?
2. Are specific phonological features (e.g., vowel frontness, consonant sonority) more strongly gendered by participants with higher bias scores?
3. How consistent are these judgments across a linguistically and culturally diverse international sample?
4. Do linguistic background and cultural upbringing moderate the relationship between gender bias and sound-symbolic judgments?

Background

Sound symbolism research demonstrates that phonological features systematically influence name gender perception across languages — names with front vowels and high sonority consonants are perceived as more feminine, while back vowels and low sonority consonants signal masculinity (Hinton et al., 1994; Sidhu & Pexman, 2019; Kawahara, 2020). The UNDP's GSNI captures gender-biased attitudes across political, educational, economic, and physical integrity dimensions, finding that nearly 9 in 10 people hold at least one bias against women (UNDP, 2023). However, the GSNI is designed for country-level analysis and has not been adapted for individual-level measurement.

Recent scholarship identifies key limitations: the GSNI conflates personal beliefs with social norms, which are theoretically distinct. Bicchieri's framework distinguishes personal normative beliefs from perceived social expectations, arguing the latter exerts greater behavioural influence (Bedford & Brosio, 2024; Cislaghi & Heise, 2020). This project develops a two-layered instrument that captures both dimensions, directly addressing these critiques. Cross-cultural validation of the Ambivalent Sexism Inventory across 62 nations (Zawisza et al., 2025) confirms that individual-level gender bias measures can be reliably adapted across diverse populations, supporting the feasibility of this adaptation.

Methodology

Overview

Mixed-methods experimental design across two sequential phases. All procedures conducted in English. Pre-validated pseudo-name stimuli provided by Professor Yoonjung Kang. Organisations involved: University of Toronto; London School of Hygiene and Tropical Medicine (Dr. Beniamino Cislaghi); Prolific.

Phase One: Literature Review (April–May, Pre-Research)

Structured review of gender bias measurement and sound symbolism literature to inform the preliminary GSNI adaptation and ensure continuity with established research.

Phase Two: Instrument Development and Pilot Testing (London, UK — Mid-June)

The researcher will travel to London to work in person with Dr. Cislaghi at LSHTM to develop the adapted individual-level gender bias survey. The instrument will capture two layers — personal normative beliefs and perceived social expectations — using Likert-scale items from the GSNI's four dimensions and the Ambivalent Sexism Inventory (Glick & Fiske, 1996). It will be iteratively pilot tested on groups of approximately five research assistants at a time until a satisfactory version is reached.

Phase Three: Main Data Collection and Analysis (Toronto, Online — Late June to July)

A new participant batch will complete the finalised gender bias survey and a sound symbolism perception task sequentially via Gorilla Experiment Builder. For each pseudo-name, participants will indicate whether it sounds masculine, feminine, or neutral, and provide a confidence rating. Approximately 100–150 English-speaking adults aged 18–30 will be recruited via SONA, Prolific, and departmental mailing lists. Data will be analysed in Python and R using logistic regression and chi-square analyses. The project concludes with a conference-ready abstract and final report.

Research Location

This research will be conducted across two locations:

- London, United Kingdom: approximately one week, mid-June 2026 (LSHTM, instrument development and pilot testing). UK visitor visa will be obtained prior to travel.
- Toronto, Canada: remainder of research period (online data collection and analysis).

Research Ethics Board

This research involves human participants and requires approval from the University of Toronto Research Ethics Board (REB).

Timeline

Period	Activities
April – May (Pre-Research)	Literature review; preliminary GSNI adaptation; REB submission; outreach to expert collaborator (Dr. Cislaghi); UK visa application and travel arrangements.
Week 1 (Mid-June, London)	Travel to London; begin in-person collaboration with Dr. Cislaghi at LSHTM; first round of pilot testing with research assistants; instrument refinement.
Week 2 (Mid-June, London)	Further iterative pilot testing rounds; finalise instrument; debrief with Dr. Cislaghi; return to Toronto.
Week 3 (Late June, Toronto)	Set up finalised survey and perception task on Gorilla platform; begin online participant recruitment via SONA and Prolific.
Week 4 (Early July, Toronto)	Continue data collection; monitor response quality; begin data cleaning.
Week 5 (Mid-July, Toronto)	Complete data collection; full data cleaning; quantitative analysis in Python and R.
Week 6 (Late July, Toronto)	Interpret findings; prepare conference-ready abstract; complete final research report and deliverables.

Potential Impact

This research advances interdisciplinary understanding of how gender bias shapes linguistic perception, and contributes a validated individual-level GSNI adaptation — a replicable methodological tool addressing well-documented gaps in existing gender norm measurement. At the societal level, findings have implications for understanding how bias operates in everyday language across diverse cultural contexts, with relevance to gender equality policy and practice. Impact will be measured through conference dissemination, a publishable abstract, and availability of the adapted instrument for future research.

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