Exploring a Causal Link between Language and Cultural Biases

Molly Lewis
mollyllewis@gmail.com
Department of Psychology
University of Wisconsin-Madison

Gary Lupyan
lupyan@wisc.edu
Department of Psychology
University of Wisconsin-Madison

Abstract

The abstract.

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Introduction

Study 1: Measuring cross-cultural gender bias

Method

We quantified the degree of gender bias in a culture using data from the Implicit Association Task ("IAT"; (Greenwald, McGhee, & Schwartz, 1998)). The IAT measures respondents' automatic associations between two sets of concepts (e.g., male-career/female-family vs. male-family/female-career). The underlying assumption of the measure is that concepts that are represented as more similar to each other in the cognitive system should be easier to pair together in a behavioral task, compared to two concepts that are relatively dissimilar. Concepts are paired in the task by assigning them to the same response keys in a 2AFC categorization task. In the critical blocks of the task, concepts are assigned to keys in a way that is either bias-congruent (i.e. Key A = male or career; Key B = female or family) or bias-incongruent (i.e. Key A = male or family; Key B = female or career). Participants are then presented with a word related to one of the four concepts and asked to classify it by responding with one of the two keys as quickly as possible. Slower reaction times in the bias-incongruent blocks relative to the bias-congruent blocks suggests an implicit association between the two sets of concepts (i.e. a bias to associate male with career, and female with family). In the present study, we analyzed an exisiting dataset of IAT scores collected online from a large, culturally diverse sample (Project Implicit: https://implicit.harvard.edu/implicit/; (Nosek, Banaji, & Greenwald, 2002)).

Analysis

We analalyzed all gender IAT scores collected from respondents between 2005 and 2016 who had complete data and were located in countries with more than 400 total respondents (N = 773,205). We further restricted our sample based on participants' reaction times and errors using the same criteria described in Nosek, Banjai, and Greenwald (2002, pg. 104). Our final sample included 664,359 participants from 49 countries, with a median of 1,123 participants per country.

Several measures have been used in the literature to describe the difference in reaction time between bias congruent and incongruent blocks (Greenwald, Nosek, & Banaji, 2003). Here, we use the best performing measure of implicit bias,
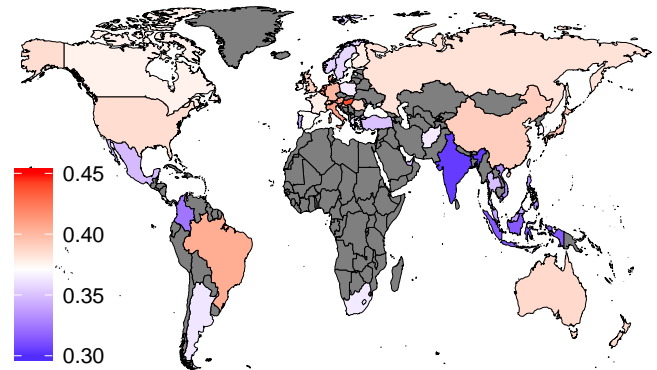
IAT Gender Bias

Figure 1: IAT gender bias (D-score) for the 49 countries with available data. All countries show a positive bias, with red indicating above average and blue indicating below average bias.

"D-score," which quantifies the difference between critical blocks while also accounting for individual differences in response time

In addition to an implicit measure, we also analyzed an explicit measure of gender bias. After completing the IAT, participants were asked, "How strongly do you associate the following with males and females?" for both career and family. They indicated their response on a Likert scale ranging from female (1) to male (7). We calculated an explicit gender bias score for each participant as the career response minus the family response, such that greater values indicated more gender bias as for the D-score.

Results

Broadly, we replicate the previous pattern of findings on the gender IAT (Nosek et al., 2002). First, participants in all countries showed bias to associate men with career and females with family. Figure 1 shows the magnitude of the IAT gender bias (D-score) across all 49 countries (M = 0.37; SD = 0.03). Second, implicit and explicit measures bias were correlated both at the level of individual participants (r = 0.15; p < .00001) and at the level of countries (r = 0.31; p = 0.03).

Finally, previous work has shown a difference for women

Study 2a: Caliskan replication

Study 2b: predicting implicit bias with language iat

Study 3: grammar and bias

Study 4: exploring bias more directly

Conclusion

References

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