Variation in the rational interpretation of slights: Gender-based microaggressions

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Communication of meaning draws on a context. Listeners rely on the shared assumption that speakers are informative, but not more so than is necessary given their common knowledge and the goal of the task [1]. Still unknown is what constitutes a context and how significantly it varies across speakers and listeners. A mismatch in expected common ground, or *what is necessary to be said explicitly*, can lead to unintended inferences or social consequences [2]. The current study takes a prominent example of such case, gender-based microaggressions, and examines how individual differences in underlying beliefs can predict derivations of slights and insults.

In two large-scale experiments, subjects rated their interpretations of sentences e.g., (1).

(1) a. You are good at math.   [Neutral] or "**N**"
    b. You are actually good at math.   [Actually] or "**A**"
    c. You are good at math for a woman.   [For a woman] or "**FW**"

These sentences are innocuous compliments for some, but while insulting or "backhanded" for others ("microaggressions"). These interpretive variations across listeners are not straightforwardly explained by traditional theories of pragmatic communication. e.g., They are *not* solely ascribable to individual differences in semantic knowledge of the adverbials (e.g., what "actually" or "for a woman" means) or in tendencies to derive pragmatic interpretations e.g., [3]. Rather, they likely arise from variations in listeners' underlying beliefs: when one regards the adverbials to be *not necessary given their contextual assumptions*, they trigger a microaggression interpretation i.e., the speaker did not treat the information content (e.g., an addressee being good at math) to be expected. As a first step addressing this hypothesis, we predicted derivations of such interpretations based on a)political party affiliation, b)beliefs about implicit sexism, and c)subjective estimates of information amount carried by the adverbials.

Exp.1 (N=200) Methods: Participants rated 36 sentences (18 critical; 18 filler) such as (1) on politeness using a 7-point scale (1=extremely impolite, 7=extremely polite). Each sentence was embedded in a main clause that identified the speaker as male or female and the addressee as female (e.g., Tom said to Katie, "You are actually good at math"). Participants subsequently completed a demographic survey and the Modern Sexism Scale (MSS) survey (Table 1).

Exp.1 Results: Data were analyzed using a linear mixed-effect model with trial type (**N**(eutral)/**A**(ctually)/**F**(or a)**W**(oman)), voting behavior, and MSS as fixed effects, and item and participant as random effects. We found that 1) **A** and **FW** were considered less polite compared to **N**, with **FW** to a greater degree (Fig.1); 2) MSS predicted judgments (p<.001), with participants indicating higher sensitivity to implicit sexism rating **FW** and **A** trials as less polite (Fig.2); 3) Republicans rated **FW** trials as more polite than Democrats (p<.001); 4) the interaction between MSS and Party predicted ratings (p<.001), such that Republicans with higher MSS scores (=sensitive to implicit sexism) were more likely to derive microaggressions.

Exp.2 (N=100) asked participants to rate the amount of information gained through hearing "Actually" and "For a woman" (Fig.4). We predicted that adverbials that change listeners' beliefs about the world to a greater extent would be *less* likely to derive microaggressions. Such expressions are genuinely informative. On the other hand, adverbials that do not meaningfully change the listener's beliefs would be contextually redundant and *more* likely to trigger microaggressions. In fact, **FW** and **A** were judged to carry less information compared to **N** (Fig.5), corroborating the finding of Exp.1 that **FW** and **A** trigger microaggressions to different degrees.

These results present novel evidence that variations in listeners' linguistic and non-linguistic beliefs combine to predict pragmatic interpretations they arrive at. Our post-hoc analyses with indexical features of participants (e.g., gender, age) further underscores the importance of socially-grounded individual variations in psycholinguistic experimentations and theory-building.

Table 1. Measurements: 1) Voting behaviors, 2) Implicit Gender Bias (MSS)

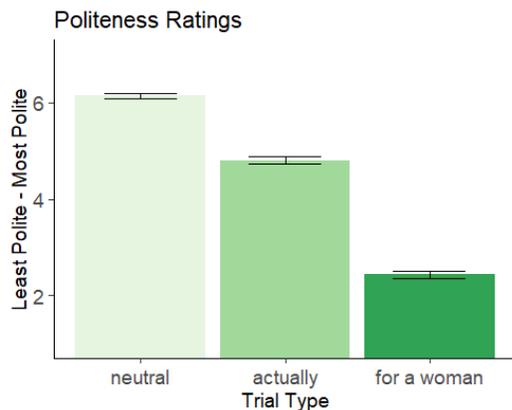| Item	# of questions	Example	Measurement
1) Voting behavior	1	"What political party do you typically vote for?"	Democrat, Republican ("Independent" included in the statistics but not plotted in Fig.3)
2) Modern Sexism Scale [4]	8	"Discrimination against women is no longer a problem in the US."	Score of agreement about the prominence of implicit sexism

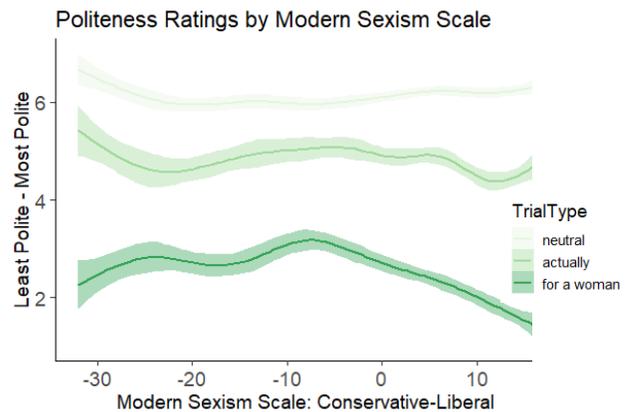Fig 1. Politeness ratings by trial type (Ex.1)

Fig 2. Politeness ratings by trial type and MSS (Ex.1)
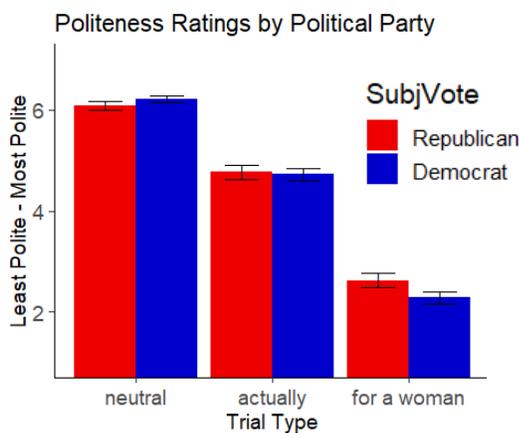

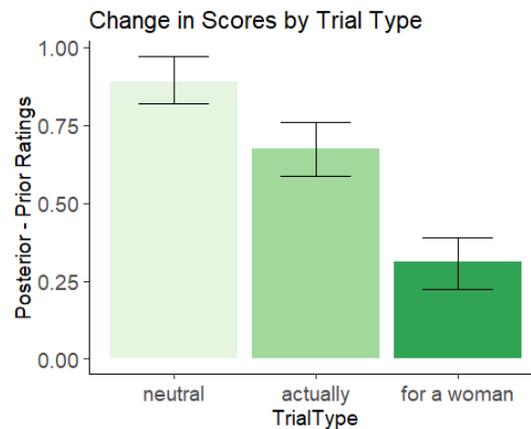Fig 3. Politeness ratings by trial type and political party affiliation (Ex.1)

Fig 5. Difference between prior and posterior ratings by trial type (Ex.2). i.e., the likelihood estimates given before and after the critical preamble sentences.
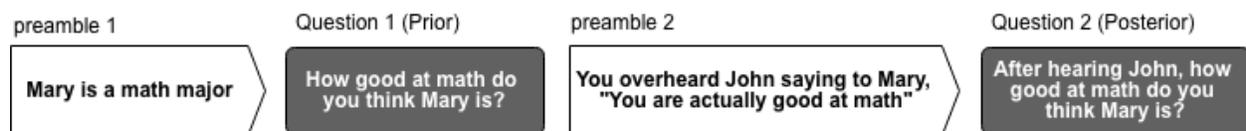

Fig.4 Example question set from Experiment 2. P(articipant)s were first presented a general description of a female character (Preamble 1, e.g., being a math major). Ps then rate the expected competence of the character (Prior). Then Ps receive a **N/A/FW** sentence (Preamble 2), and then rate the competence again (Posterior). The difference between the Prior and Posterior indexes the amount of information gained.

[1] Grice, H. P. (1975). *Logic and Conversation*. [2] Clark, H. H. (1996). *Using Language*. [3] Niuland, M., Ditman, T. & Kuperberg (2010). On the incrementality of pragmatic processing: An ERP investigation of informativeness and pragmatic abilities. *J. of Memory and Language* [4] Swim, J. K., et al. (1995). Sexism and racism: Old-fashioned and modern prejudices. *J. of Personality and Social Psych.*