

## **The influence of race and gender on perspective-taking during language production**

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Linguistic descriptions are acts of perspective-taking. When we say that *the man chatted with the woman* rather than *the woman chatted with the man*, we offer one of many possible perspectives on a single event. In the present experiments, we provide new evidence showing that the way in which speakers take perspectives is influenced by subtle social biases that cause them to highlight their own social group.

Socially biased perspective-taking could emerge in at least two ways. One route is via social status: a speaker may be more likely to say “the man chatted with the woman” over “the woman chatted with the man” because social learning encourages us to perceive men as more agent-like than women<sup>1</sup>. A second possibility emerges from the ingroup/outgroup distinction: speakers may be more likely to take the perspective of a figure from their own social group. Doing so could be driven by higher-order social biases<sup>2</sup>, but could also emerge from more basic sentence processing mechanisms, specifically the tendency for conceptually accessible (easily retrieved) words, such as names for animate entities, to occur earlier in sentences, in ways that cue a specific perspective<sup>3</sup>. This raises the possibility that social factors that influence conceptual accessibility, such as whether a named individual is from the speaker’s ingroup, could also influence perspective-taking.

In our task, participants learned the names of 8 individuals (Fig 1), then described animated images in which pairs of individuals interacted in semantically symmetrical events (e.g. dancing, talking, arguing, etc.). On each trial, they saw an event followed by a matching sentence fragment (e.g. *...is arguing with...*), and completed the sentence using the names of the relevant individuals (Fig 2). We measured which individual was mentioned first.

Critically, on half the trials the depicted individuals differed in gender but matched in race (i.e. black woman/black man; white woman/white man), while in the other half they matched in gender but differed in race (i.e., black woman/white woman; black man/white man). We tested how first mention on these trials was affected by Social Group (testing 60 black women, 60 black men, 60 white women, and 60 white men, mean age 31 years, all recruited through Prolific.com); and by the Syntactic Frame of the response (transitive: *...is arguing with...* vs. conjoined noun phrase: *...and... are arguing with each other*).

We found that participants’ own social group significantly influenced order of mention. Male participants, compared to female participants, were more likely to mention the male individual first ( $p < .001$ ; Fig 3). White participants, compared to black participants, were more likely to mention the white individual first ( $p < .001$ ; Fig 4). Overall, men mentioned the male individual first at above chance levels, and the same was true for white participants with white individuals, and black participants with black individuals. Women showed a marginal tendency to mention the female individual first ( $p = .08$ ). Thus, participants showed a tendency to describe scenes from the perspective of their own social group. Although we had expected the effect of social group to be stronger when participants produced transitive sentences, there was no robust effect of Syntactic Frame.

As these findings were novel, we confirmed them in a replication study ( $n=240$  participants) using new stimuli that better-controlled for variation in the salience and size of the depicted individuals. Again, we found that participants’ own social group significantly influenced order of mention. Black participants mentioned black individuals first, white participants mentioned white individuals first, and men mentioned male individuals first; although women often mentioned the female figure first, this was not above chance.

The current work provides evidence that linguistic perspective-taking is influenced by social identity, such that speakers prioritise the perspective of members of their own social group. The data highlight that social information is incorporated into even the simplest of linguistic tasks. This raises important questions about how social effects on perspective-taking might differ based on the semantics and valences of different events, as well as about the consequences of these biases for listeners’ interpretations.

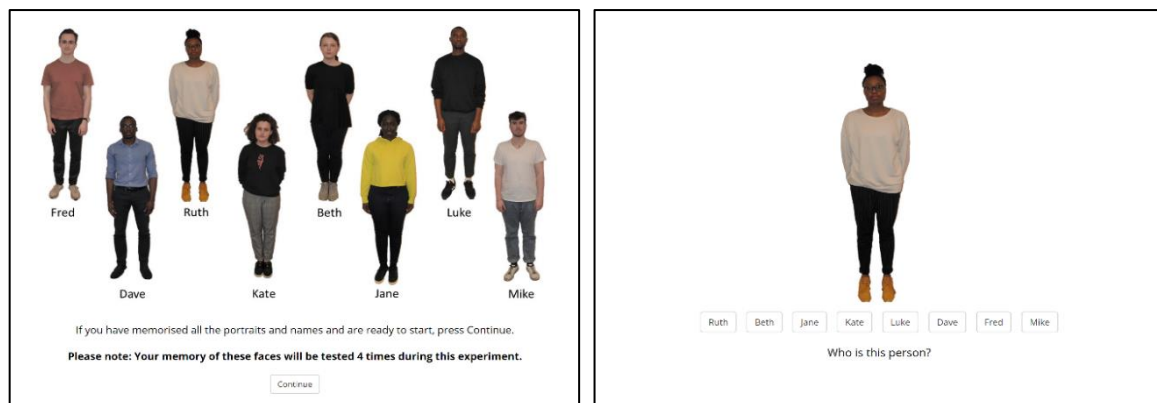


Figure 1. An example of the memory task, depicting one trial out of eight. Participants had to guess all eight names correctly before moving onto the language task.

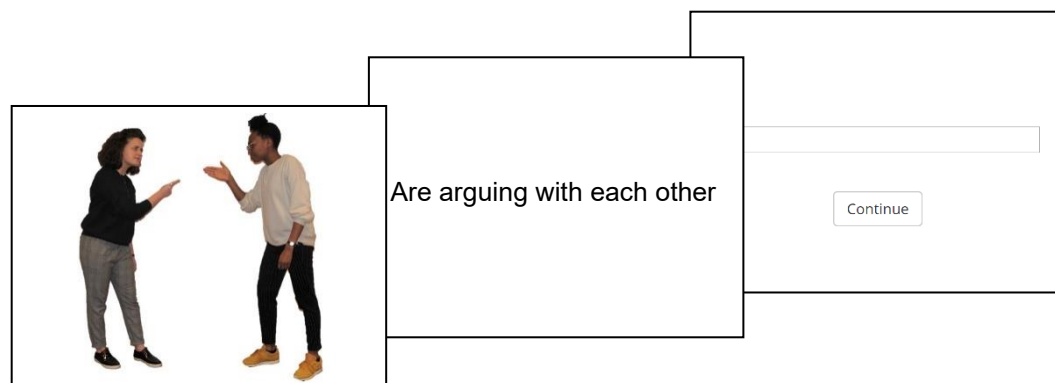


Figure 2: An example of *arguing* between Kate (left) and Ruth (right). Participants completed the sentence using the given phrase and typed it into the textbox provided (e.g. *kate and jane are arguing with each other*). Each image is presented as an animated GIF, flipping around the left-right axis twice per second, minimising participants' tendency to describe the left figure first.

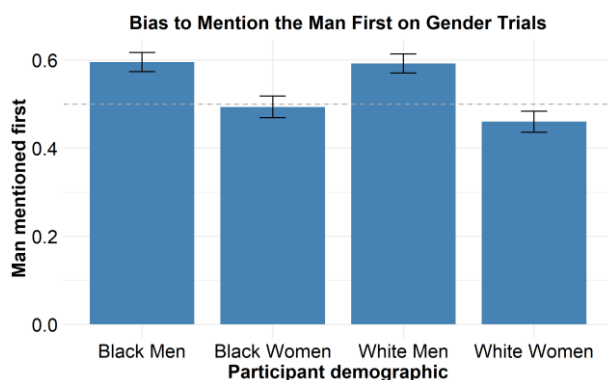


Figure 3 – The mean proportion of gender trials (those depicting man/woman dyads of the same race) on which participants mentioned the man first, across participant demographic. Error bars represent one standard error, dotted line represents chance.

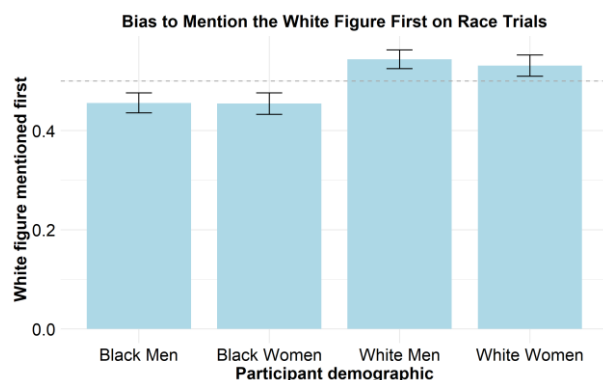


Figure 4 - The mean proportion of race trials (those depicting white/black dyads of the same gender) on which participants mentioned the white figure first, across participant demographic. Error bars represent one standard error, dotted line represents chance.

## References

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