Gender-Biases in Language Processing: Explicit Beliefs About Event Outcomes vs. Implicit Linguistic Expectations

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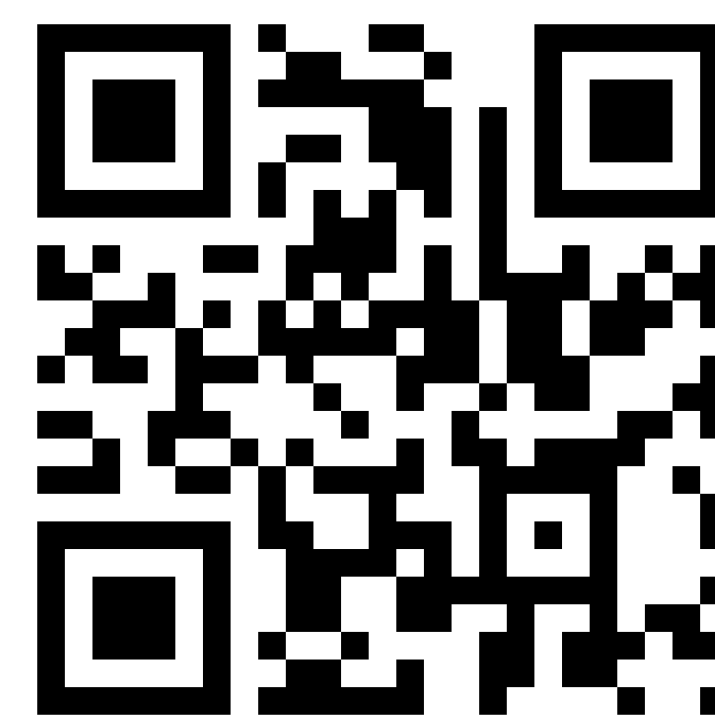[1]University of Potsdam, [2]Massachusetts Institute of Technology, [3]UC San Diego

Research question:

Do subjective beliefs about the state of the world transparently translate to expectations about upcoming linguistic material in comprehension and linguistic choices in production?
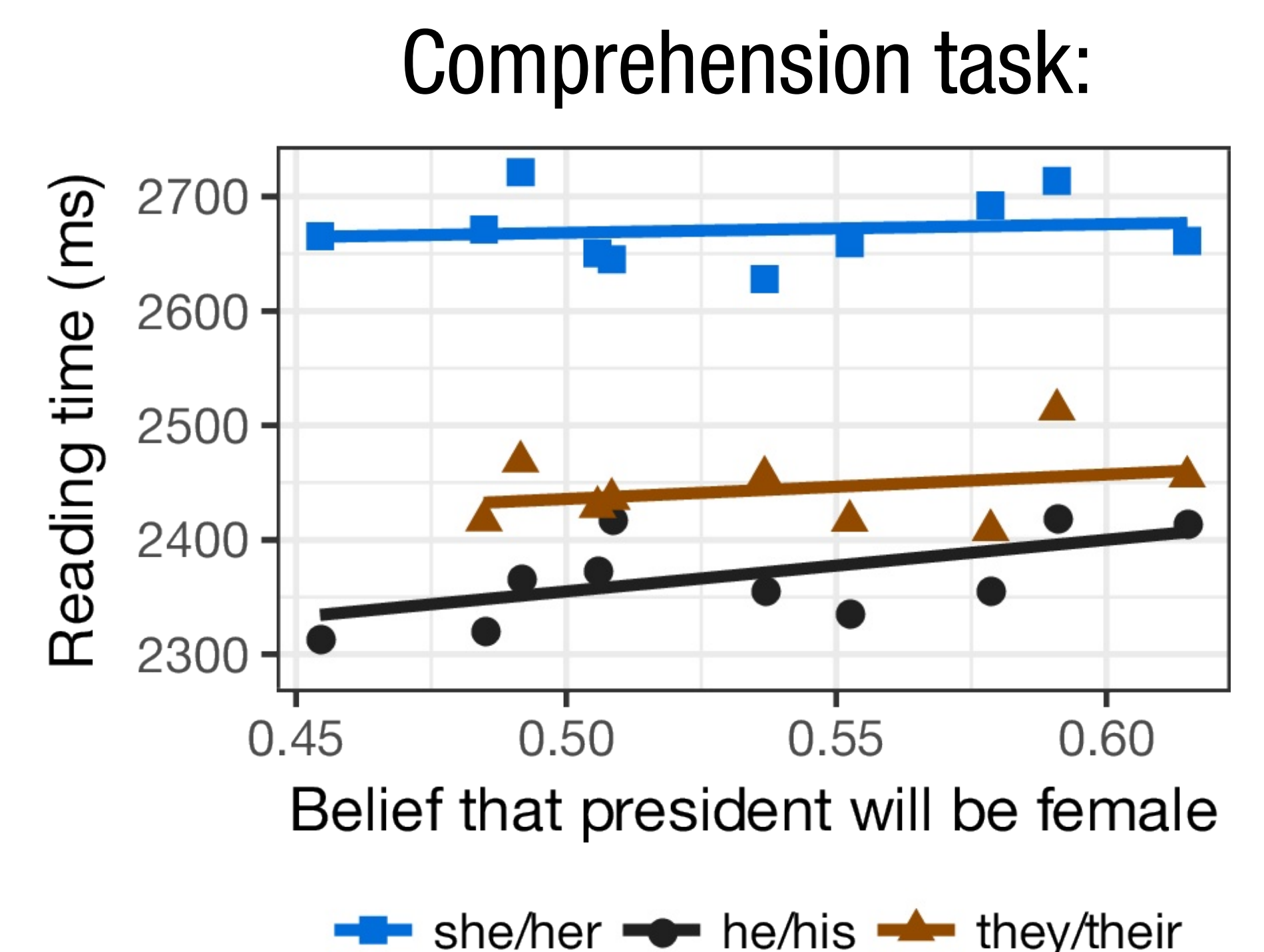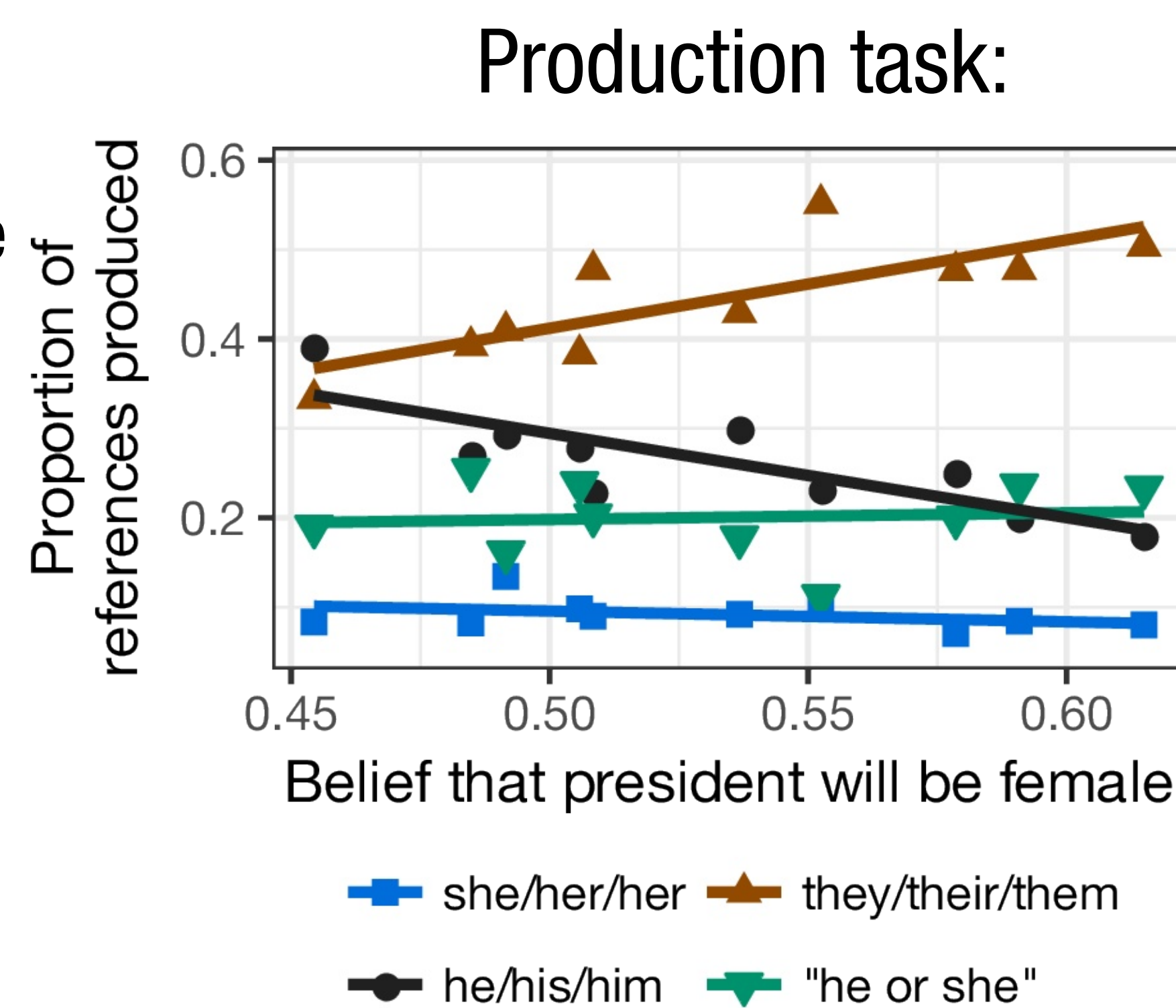
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Experiment 1: Pronouns referring to the next US President during the 2016 US presidential campaign

- Online data collection from June 2016 (primaries) to February 2017 (after inauguration).
- Belief estimation task (N=3,360): Participants indicate how likely each candidate is to become the next president. → Likelihood of female future president.
- Sentence completion task (N=6,720): Participants completed sentences about the future president, potentially with gendered or gender-neutral pronoun referring to the future president.
- Self-paced reading task (N=13,440): Participants read texts about the future president containing pronominal references (e.g., he/she/they).

Production task:

Comprehension task:

Stimuli text completion (N=12):

The next US president will be sworn into office in January 2017. After moving into the Oval Office, one of the first things that ...
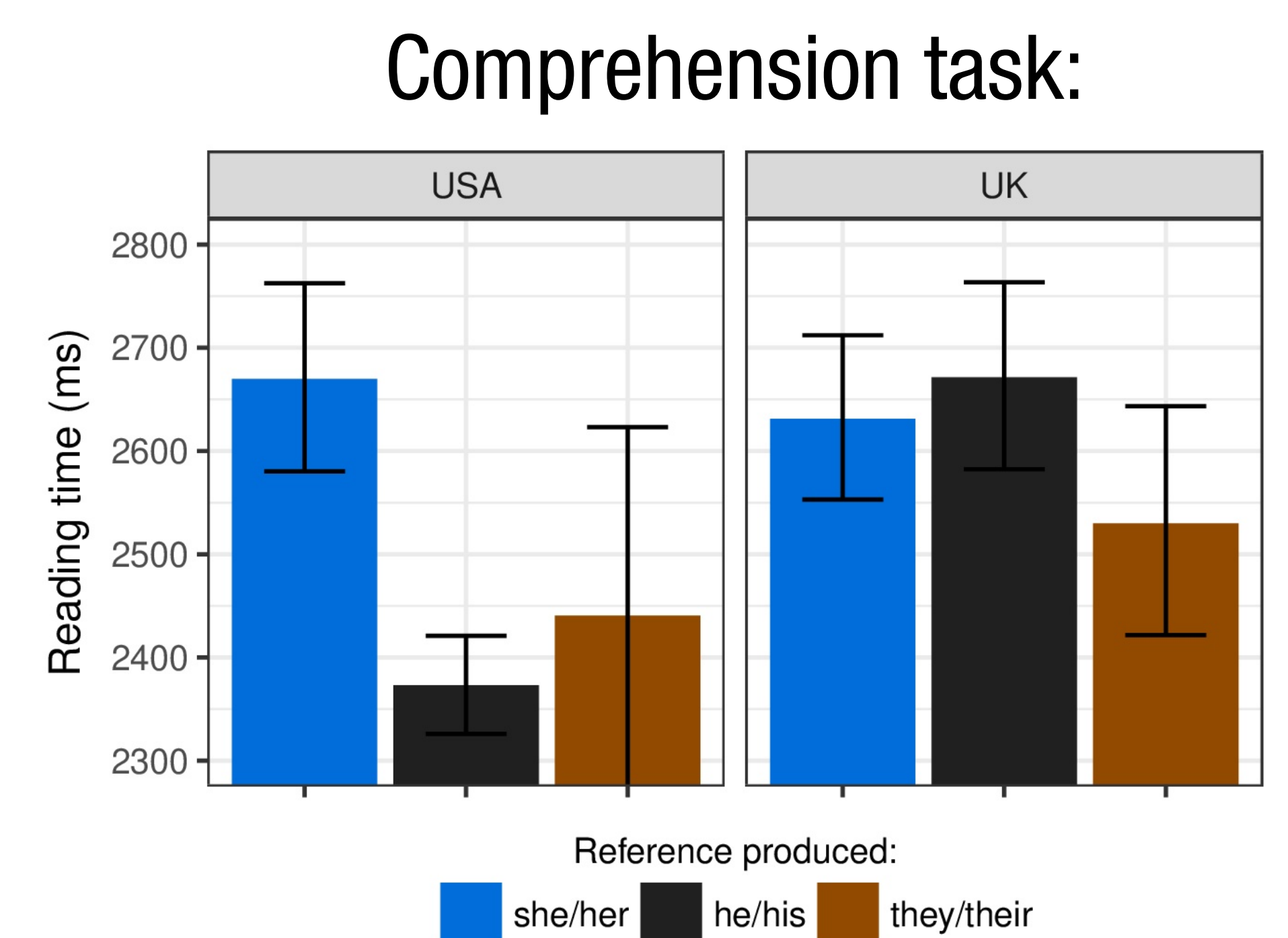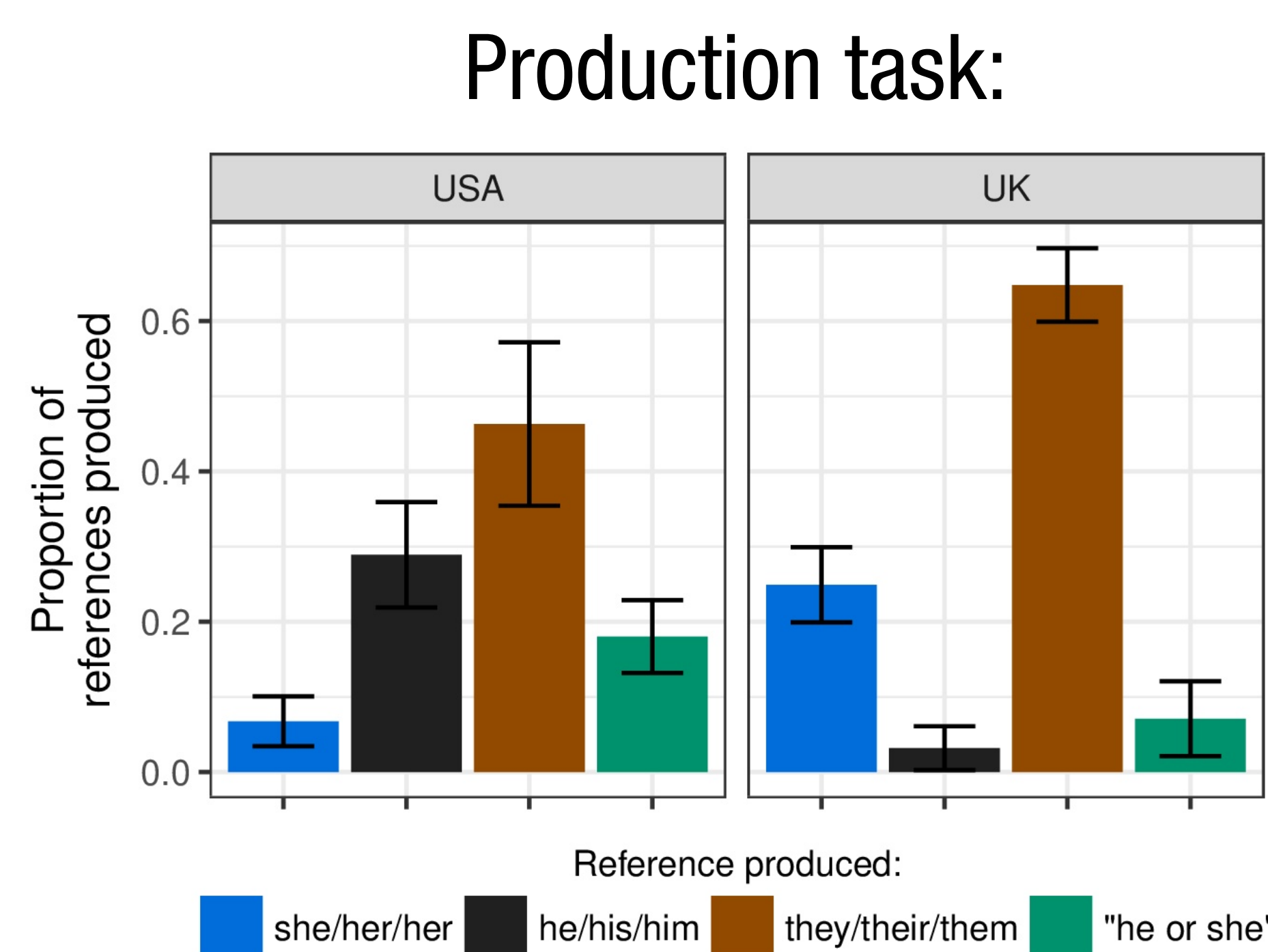
Stimuli self-paced reading (N=132):

The next US president will be sworn into office in January 2017. After moving into the Oval Office, one of the first things that **he|she|they** will do is hold a staff briefing. During the inauguration speech, the president will emphasize **his|her|their** commitment to resolve outstanding issues quickly.

Experiment 2: Pronouns referring to the next UK Prime Minister during the 2017 UK general election
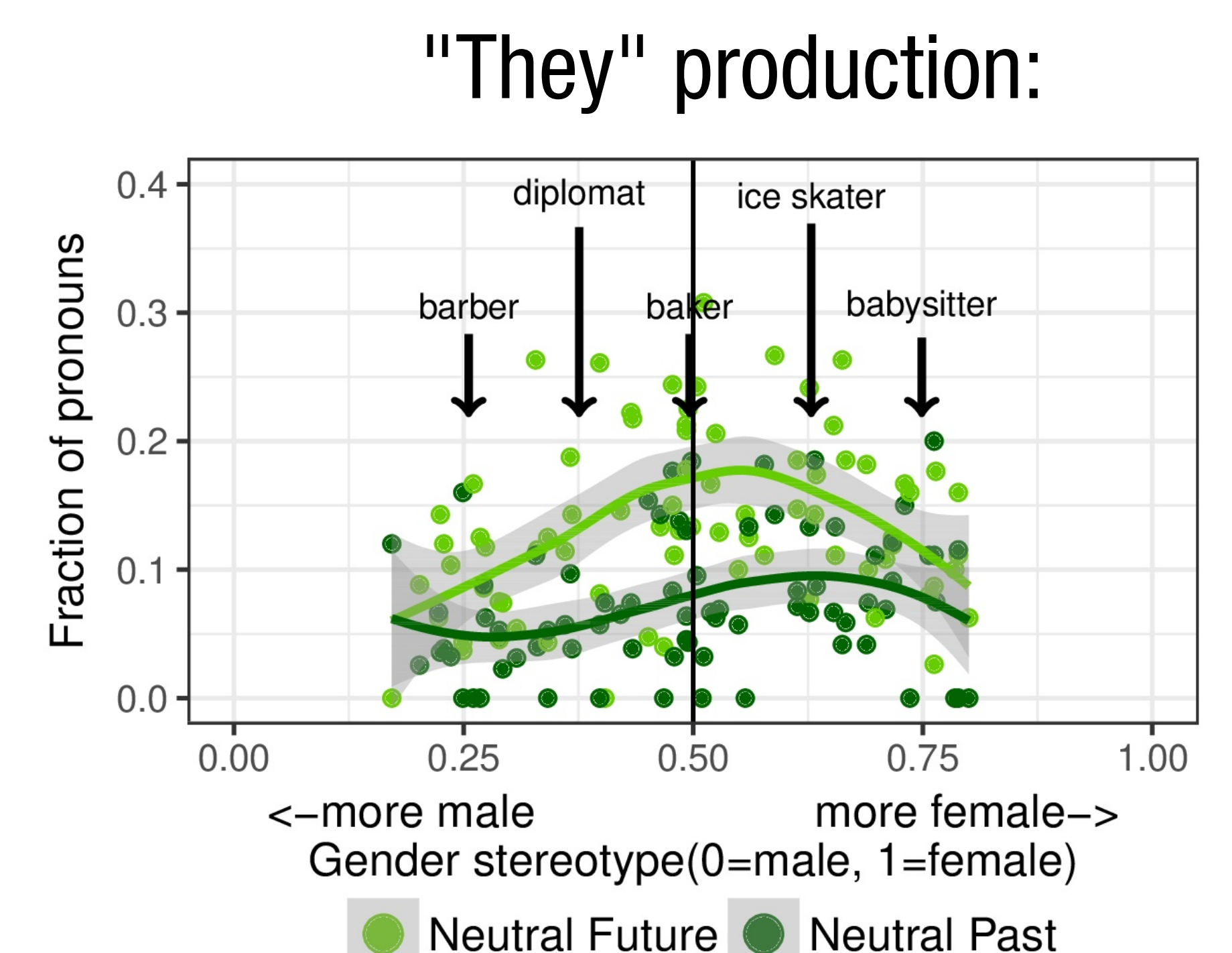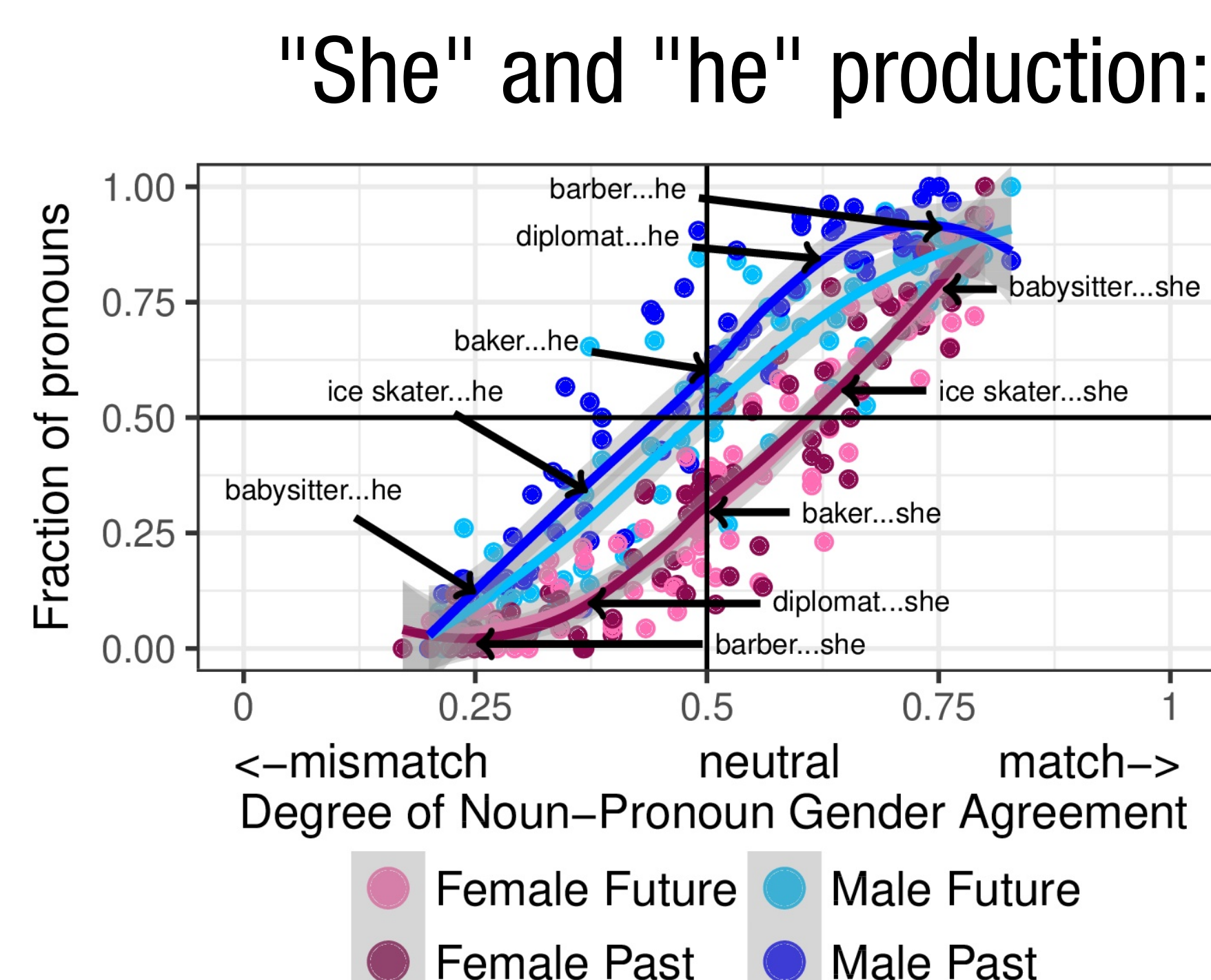
How stable are these biases?

- Online data collection in the week before the general election (N=1,600).
- Sentence completion task: Participants completed sentences about the future prime minister.
- Self-paced reading task: Participants read texts about the future prime minister.
- Same methods and procedure as in Expt 1.
- Stimuli similar to Expt 1 but adapted to UK customs and regulations around the election.

Production task:

Comprehension task:

Experiment 3: Pronouns referring to roles with varying gender-stereotypes

Do these biases generalize?

- Belief estimation task (N=53): Participants indicated how likely each of 80 role nouns is to refer to a male or female person.
- Sentence completion task (N=300): Participants completed sentences about each role noun. Sentence fragments similar to Expt 1 and 2.
- Self-paced reading task (N=366): Participants read texts about each role noun. Tense was past or future.

"She" and "he" production:

"They" production:

Discussion and Conclusions:

- Beliefs about the world **do not** transparently translate to linguistic expectation in comprehension and to linguistic choices in production.

- In effect, production and comprehension biases conspire to distort our perception of the world.