January 15, 2020

[May R. Berenbaum] 🡨 or whichever editor we should send to

Editor-in-Chief, *Proceedings of the National Academy of Sciences of the United States of America*

Dear Dr. Berenbaum,

We would like to submit a manuscript for potential publication in the *Proceedings of the National Academy of Sciences of the United States of America*, entitled “People calibrate the design and detection of lies by reasoning about other agents.”

How do people lie and detect lies? Existing research focuses on willingness to lie and ability to detect lies, but not how the lies are generated, and which lies are detected. We approach lying from a rational communicative framework: liars reason about what lies others might detect and detectors reason about what lies others might produce. This framework yields a formal model of how people will lie, and detect lies, which we test in a 2-player lying game. We show that people lie and detect lies consistent with this normative account: people are sensitive to what others believe about the world and their incentives both when generating, and when detecting, lies. Furthermore, by comparing lying to a normative account, we can quantify people’s aversion to lying, and show that people underestimate others’ aversion to lying. By validating a quantitative model of lying and lie detection, we provide the first formal, predictive, account of lying and lie detection.

Given the current broad interest in people’s susceptibility to fake news and false information, and this study’s important theoretical contribution to research in deception and human cognition, my co-authors and I believe that this would be an appropriate manuscript for *PNAS*.

The manuscript is 7 pages long (4,834 words) and includes 4 figures. This work has not been previously published, nor is it under consideration for publication elsewhere. Neither my coauthors not I have any conflicting interests with regard to this research.

Thank you for your consideration.

Sincerely,

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