## Things we know about media and morality

To the Editor — Crockett's Comment 'Moral outrage in the digital age' explains how social media affect responses to moral violations and the consequences thereof: social media increase the frequency of exposure to moral violations, alter the cost and constraints of experiencing them, and promote feuding responses. We applaud Crockett for addressing this pressing topic. However, a significant body of communication science research suggests important ways in which Crockett's model and hypotheses could be enriched and refined.

First, Crockett argues that individuals show moral outrage when exposed to moral content in social media contexts and that this outrage is consistent with an individual's moral subculture. Crockett primarily accounts for volume and platform of exposure while underspecifying content as emotional, immoral or otherwise triggering stimuli. Volume is a reasonable start. However, existing models show that moral beliefs shape media exposure, and that these beliefs are influenced as a result. Moral subcultures emerge in response to media use<sup>2</sup> and the moral profiles of these subcultures shape the evaluation of moral actions3. Importantly, moral messages differ in systematic ways4 and vary by source<sup>5</sup>. Therefore, research should address how variations in media content interact with individuals' moral profiles to shape exposure<sup>6</sup> and subsequent behavioural outcomes<sup>7</sup>. Given that volume can be considered an outcome of variation in moral content, Crockett's model would benefit from specifying message, source and receiver characteristics that explain intensity of and variation in moral emotions.

Second, Crockett's argument assumes that social media constitute echo chambers and that exposure to moral content in social media contributes to polarization. Empirical

support for these assumptions is mixed. Moral content on social media platforms are part of broader media contexts that jointly contribute to moral evaluations and behaviour. In traditional and new media contexts, audience fragmentation is lesser than audience duplication and this finding is true across multiple nations and platforms8. If social media significantly contribute to polarization, then the most polarized audiences should use social media the most. Nationally representative data show the opposite pattern9. Accordingly, Crockett's hypothesis that echo chambers associated with social media limit the costs and benefits of moral outrage requires further empirical scrutiny.

Finally, Crockett argues that exposure to moral content evokes stronger moral outrage in social media compared with in person. This is supported by preliminary evidence for a small effect size in a large sample<sup>1</sup>. However, the hypothesis that social media exacerbate moral outrage in kind and ferocity over other channels requires additional evidence. Illuminating questions might consider the properties of social media in addition to volume and ease of transmission with a focus on the written nature of online communication that intensifies the emotional impact of messages. Despite the prevalence of graphics in social media, commenting is still predominantly textual, and therefore exceptionally provocative10. If we agreed that evidence for echo chambers is inconclusive and social media may not limit the benefits of moral outrage, then other factors such as intensified self-perceptions and commitment to public positions due to postings are indeed aspects worth considering in more detail.

Ultimately, if social media affect moral outrage at the individual and societal level, then cross-disciplinary collaborations

to model morality, media and their mechanisms will help us better understand these phenomena.

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## Author contributions

R.H. conceived of the manuscript. R.H., N.B., A.E., M.G., L.H., R.L., N.M., R.T., J.B.W. and R.W. wrote the manuscript. After R.H., authors are listed in alphabetical order by surname.

## Competing interests

The authors declare no competing interests.