Linking lab and field research

Upon starting my PhD in Psychology, I was convinced I'd be running nothing but experimental studies in the laboratory. This perception changed when I came across a 2019 paper by Guess and colleagues, whose pioneering approach to studying the spread of misinformation online bridged the gap between lab and field research.

Researchers increasingly turn to social media data to study human behaviour within ecologically valid settings, reflecting the prevalence of online interactions in contemporary society. Nevertheless, these data are not tailored for research and present a set of inherent challenges. Usually, identifying the characteristics of individual social media users is difficult, in part because people often don't disclose this information. This lack of information limits social media researchers to drawing conclusions about accounts or posts rather than the people behind them. For instance, with only the account information, it can be unclear whether misinformation was shared by a human user or a bot.

Guess and colleagues were able to circumvent this problem by administering a survey (including demographics and political attitudes) to social media users and linking it to their sharing behaviour on Facebook during the 2016 US presidential election. On the basis of these data, they inferred that the most conservative Facebook users were more likely to share 'fake news' articles. They also found that older adults shared nearly seven times as many 'fake news' articles online as younger adults. This age effect persisted even when the authors controlled for users' education, partisanship and ideology.

The paper by Guess et al. prompted a fundamental shift in my thinking about methodology. Their work made me realize that to fully grasp online behaviour, researchers have to combine laboratory and field studies rather than running them separately. In fact, hybrid lab–field studies hold tremendous potential for uncovering insights into online behaviour. They combine the best of both worlds — users' characteristics and their ecologically valid digital traces — and therefore avoid pitfalls such as the biases of self-reports.

Our team is currently building on the approach used by Guess et al. by running a hybrid lab–field study on Twitter. In addition to linking traditional survey data (such as demographics and political attitudes) and field data, we prompt users with brief surveys via direct messages immediately after they share on the platform to elicit their motives for sharing. We believe this experimental design will offer unique insights into users' online behaviours by examining validated self-reported scales and real-time experience sampling in conjunction with digital traces from social media, thereby combining approaches that were previously disconnected.

Studying digital traces has the potential to revolutionize the understanding of human behaviour and interaction. However, I believe that meaningful measures can be fully attained only with more relevant context around people's digital traces — for instance, by linking them with their behavioural motives.

In the light of challenges of increasing scale and sophistication, such as misinformation and climate change, hybrid lab–field studies will be indispensable for understanding and intervening in human behaviour. These studies can be applied in a range of areas, including mobile phone usage, health monitoring and online shopping behaviour. I aim to contribute to this research frontier in my own work, moving the field of psychology towards more meaningful insights into human behaviour outside the laboratory.

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Competing interests
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Related articles: Mosleh, M., Pennycook, G. & Rand, D. G. Field experiments on social media. *Curr. Dir. Psychol. Sci.* **31**, 69–75 (2022); Parry, D. A. et al. A systematic review and meta-analysis of discrepancies between logged and self-reported digital media use. *Nat. Hum. Behav.* **5**, 1535–1547 (2021)