



SOCIAL MEDIA AND SCIENCE COMMUNICATION: DO USERS CONFUSE THE ROLES OF SENDERS?

Eva Rudholzer¹ & Sonja Utz^{1,2}¹Leibniz-Institut für Wissensmedien, Tübingen ²University of Tübingen

BACKGROUND

- The digital transformation has changed how people communicate and how scientific knowledge is distributed^{1,2}
- The public increasingly uses social media platforms to get information about science^{3,4}
- On social media various actors can contribute: (Scientific) experts and non-experts^{2,4,5}
- Individuals skim information presented in a newsfeed⁶ and barely verify sources (e.g. checking the profile information)

→ **Hypothesis:** Users confuse the roles of senders on social media in science communication

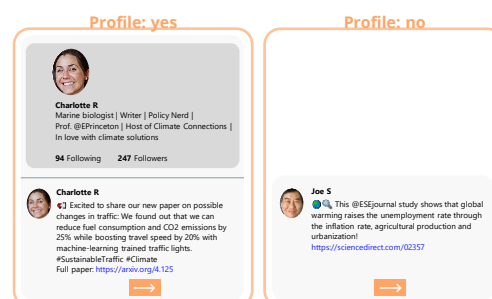
METHOD

Sample Size 311 UK-based participants recruited via Prolific
 $n_{\text{female}} = 49.8\%$; $n_{\text{diverse}} = 0.6\%$; $M_{\text{age}} = 43.02 \pm 12.40$

Mixed Design 2 between (profile information: yes, no) x
 2 within (confusion-type: within, between) x
 2 within (role: scientist, layperson) x
 2 within (statement: identifiable, not identifiable)

EXAMPLE

Screenshot of the two conditions: post with additional profile information (left) and post without additional profile information (right) in the presentation phase.

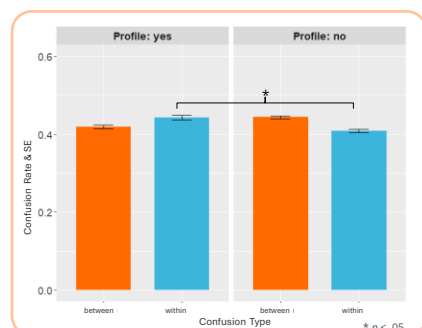


PROCESS EXPERIMENT Who said What? paradigm



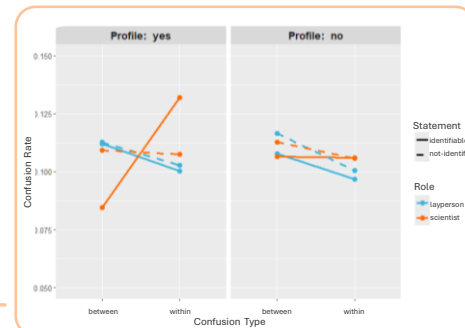
PREREGISTERED HYPOTHESIS AND RESULTS

H1: Individuals in the *additional profile information* condition categorise the role correctly (scientists vs. laypeople, i.e., they make more within- than between-confusions), whereas the effect is **reduced** or **reversed** for individuals in the *no additional profile information* condition. ✓



Results for H1 (profile x confusion-type): Categorisation in within- and between-category confusion for the conditions *additional profile information* (Profile: yes) and *no additional profile information* (Profile: no) with $F(1, 309) = 7.46, p = .007, \eta^2 = .028$.

Four-way interaction (profile x confusion-type x role x statement): Categorisation in within- and between-category confusions for identifiable and non-identifiable statements of scientists and laypeople (role) in the conditions *additional profile information* (Profile: yes) and *no additional profile information* (Profile: no) with $F(1, 309) = 6.29, p = .013, \eta^2 = .020$.



CONCLUSION

Social media users are likely to confuse the roles of senders ...
 ... when no additional profile information is displayed

Users might make incorrect assumptions about senders' background
 → Difficulty verifying a source or role as credible or not credible
 → Particularly relevant in science communication

REFERENCES

¹ Brüggemann et al. (2020). *Journal of Science Communication*, 19(03), A02. ² Neuberger et al. (2019). *Medien & Kommunikationswissenschaft*, 67(2), 167–186. ³ Brossard (2013). *Proceedings of the National Academy of Sciences*, 110(Supplement_3). ⁴ Taddicken & Krämer (2021). *Journal of Science Communication*, 20(03). ⁵ Neuberger et al. (2021). *Der digitale Wandel der Wissenschaftskommunikation*. ⁶ Levordashka & Utz (2017). *Social Psychological and Personality Science*, 8(1), 93–101.