Does overconfidence undermine misinformation interventions?

Jabin Binnendyk[1], Sze Yuh Nina Wang[1], Samantha Phillips[2], & Gordon Pennycook[1]
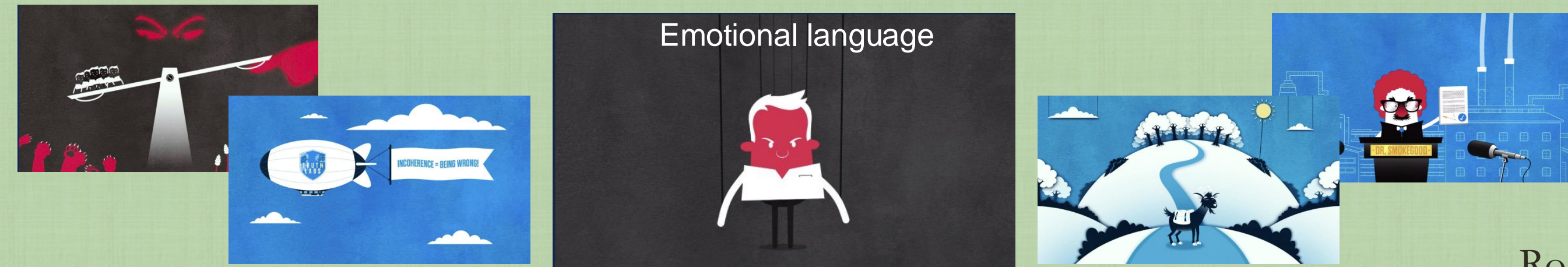
[1] Cornell University, [2] Carnegie Mellon University

Commonly used misinformation interventions

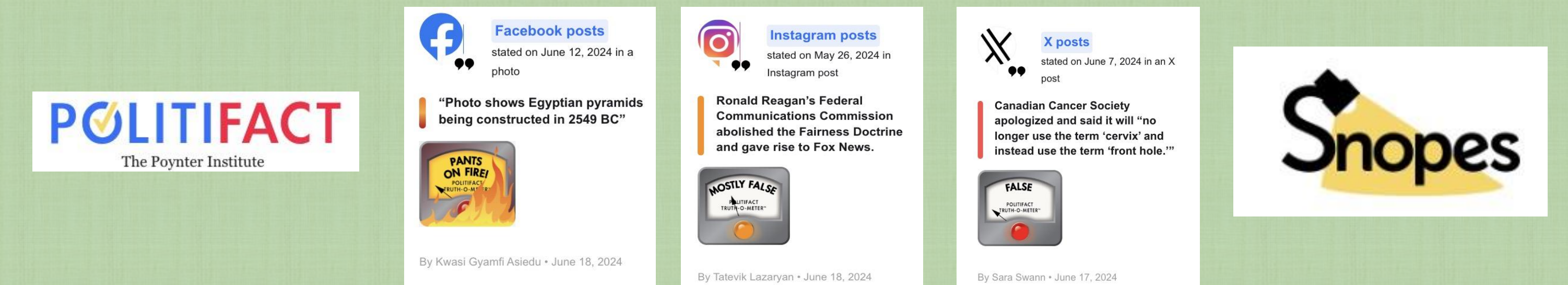1) **Psychological inoculation:** prebunking approach

Provides tips on spotting falsehoods e.g., emotional language

Emotional language

Roozenbeek et al., 2022

Does overconfidence moderate their effectiveness?

2) **Fact-checking:** debunking approach

participants provided fact-check after misinformation

Psychological Inoculation Study

Intervention (n = 492) / Control (n = 508)

DV = Stimuli ratings (10 items)
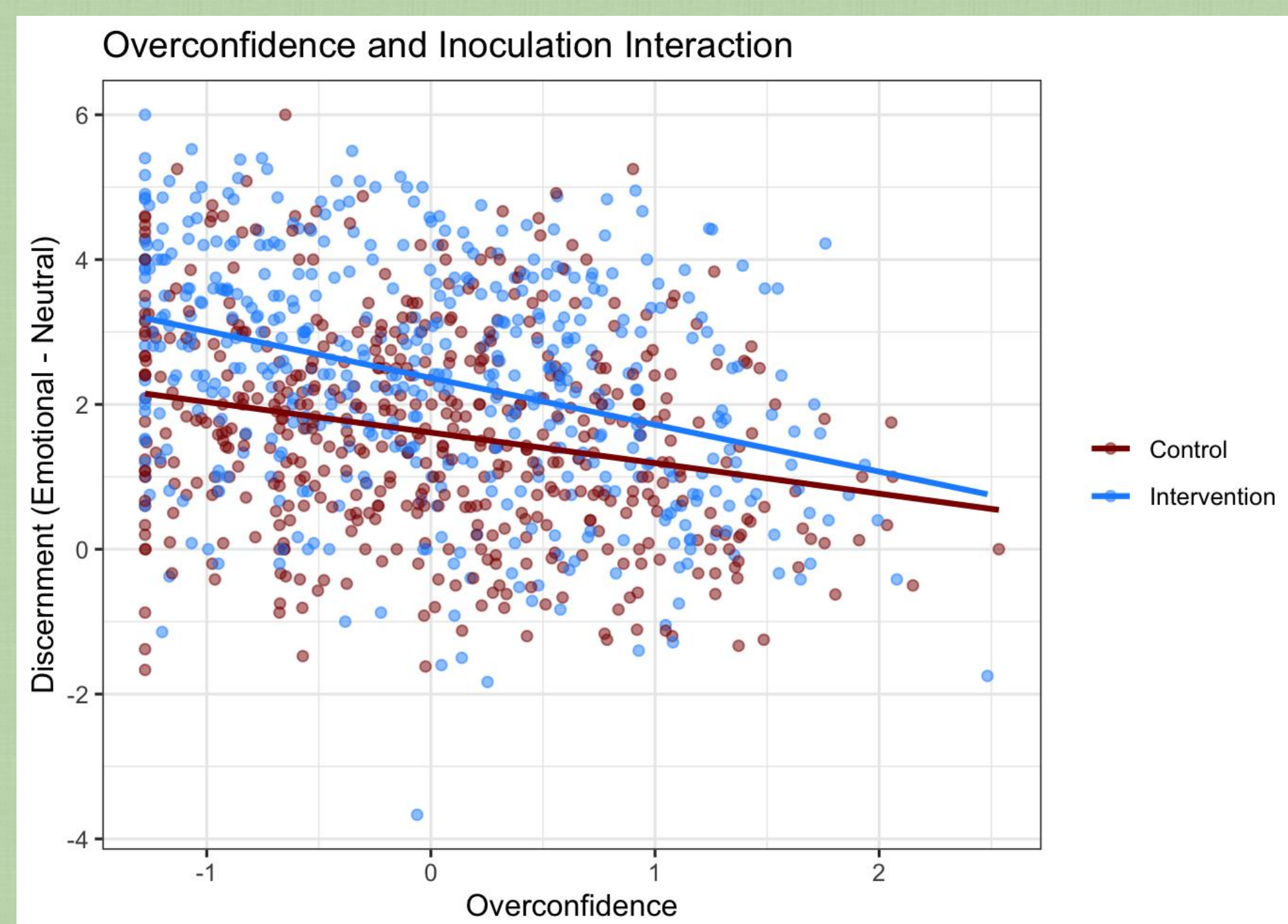
   Manipulative or neutral – randomized pairs

IV = GOT
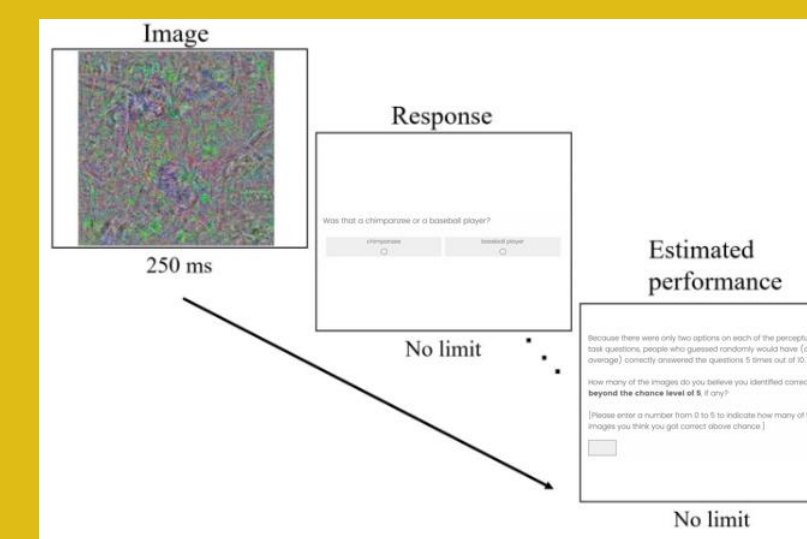
Discernment ~ GOT * Intervention

GOT [b = -.53, p < .001]

Inoculation [b = .75, p < .001]

GOT : Inoculation [b = -.23, p = .042]

Generalized Overconfidence Task (GOT)

- General tendency to be overconfident

Binnendyk & Pennycook, 2024

TAKE HOME POINTS

i) Overconfidence appears to moderate the efficacy of psychological inoculation and fact-checking (albeit modestly)

ii) Given overconfidence is associated with increased belief and sharing of misinformation[1], those more vulnerable may not receive the intended benefits

1. See Lyons et al., 2021; Pennycook et al., 2024 Vranic et al, 2021

Fact-checking Study

Intervention (n = 500) / Control (n = 505)

DV = Average belief (4 posts ranging on topics)
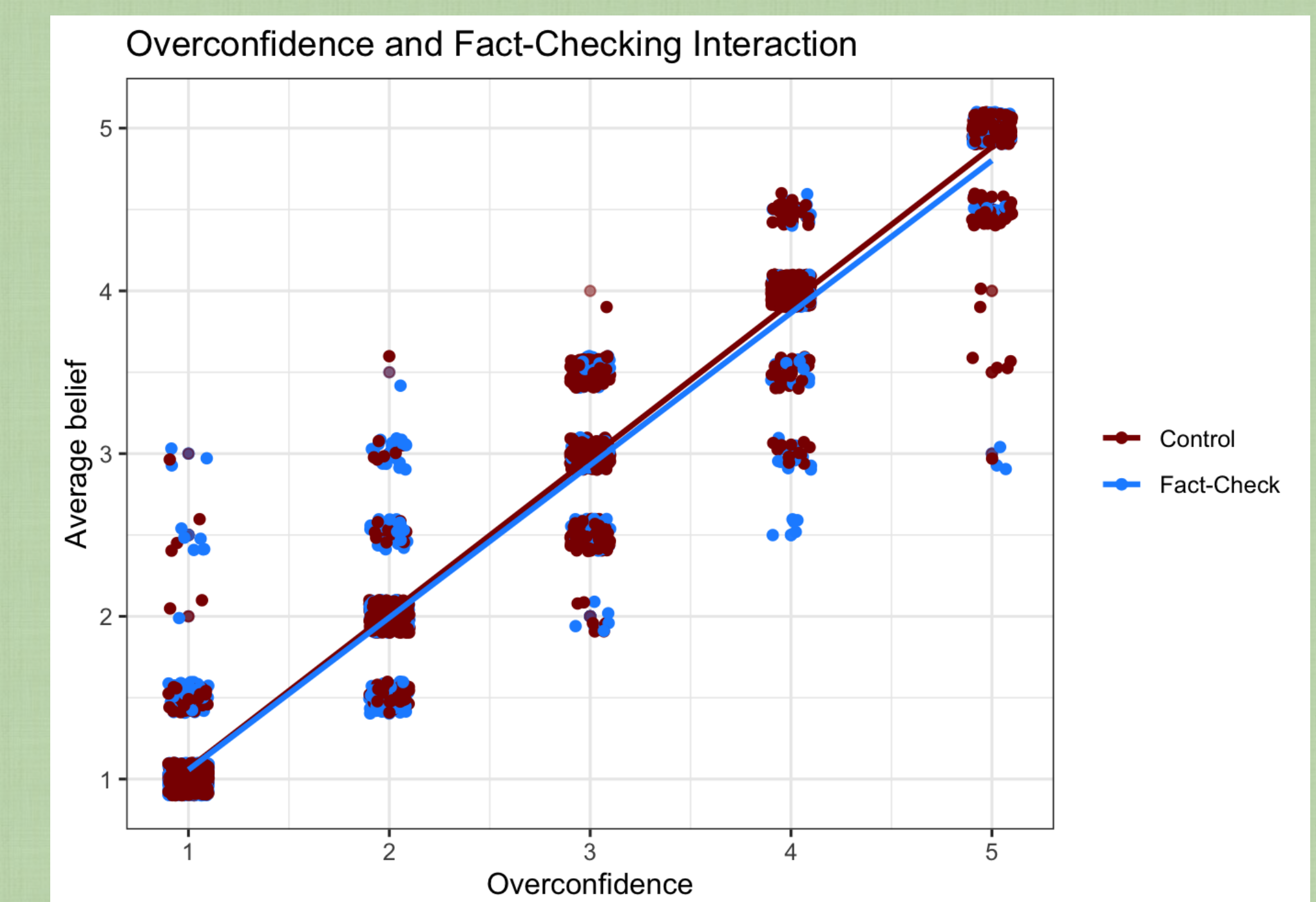
   High or low emotionality posts

IV = GOT

Belief ~ GOT * Fact-check + (1|item) + (1|subj)

GOT [b = .04, p = .005]

Fact-Check [b = -1.01, p < .001]

GOT : Fact-Check [b = .06, p = .034]

Future work could examine other interventions commonly used to see whether this effect persists. Additionally, considerations for other cognitive biases would be beneficial to ensure the intended effects. **Limitations** include convenience sampling – representativeness and selection biases – and temporal effects.