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Advancing The Cognitive Science of Online Political Discourse

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Introduction

The public sphere has shifted online, fundamentally altering the way political ideas are shared, debated, and contested. From topic-based chatrooms and social media threads to viral memes and videos, the internet has created new modes of political communication, each with its own cognitive and social dynamics. To grasp how political thought is constructed in this digital landscape, we need to examine not only the content of political messages but also the structures that shape their impact. In these domains, we need to understand the messages that change people's minds, rather than those that only serve to reaffirm and solidify strongly held beliefs. Studying this question is difficult not just because of the complexity of measuring and intervening on human political cognition in a noisy naturalistic setting but because of, for example, the proliferation of bots in online spaces and the frequency of insincere bad-faith posting and commentary. The research presented at this symposium advances our field's understanding of online political discourse and cognition by applying multiple methodologies, including leveraging statistical and natural language processing of large-scale social media corpora, along with novel experiments to test what persuades, and how to counter misinformation. Our goal is both to advance theories of cognition by analyzing online thought and discourse and develop interventions to help improve the health of our information ecosystem and shared political beliefs.

Speakers: Micah Goldwater is an associate professor at the University of Sydney who researches concept use, learning, and representation. His presentation examines how political memes function as persuasive tools, distilling complex ideas into shareable, emotionally resonant images. Nina Wang is a postdoctoral research fellow at Cornell University, who researches the use of moral language in political discourse, and the role of social media in spreading misinformation. Her presentation explores the potential of crowdsourcing to fact-check political content on TikTok, evaluating whether collective intelligence can counter misinformation. Hunter Priniski is a postdoctoral research fellow at UCLA, who researches how people's beliefs are influenced by interactions in online environments. His presentation analyzes how online networks shape political communication, integrating agent-based simulation studies and natural language modeling with human experimentation. Zachary Horne is a Lecturer at The University of Edinburgh who studies belief updating and explanatory reasoning. His presentation turns to the Change My View subreddit to identify the features of arguments that successfully change people's minds. We will end the symposium with an interactive discussion with the audience to integrate across the four presentations of novel research.

How do political memes persuade?

Micah B. Goldwater

Internet memes were once thought of as just sources of absurdist humor that defined the emerging online style of comedy early in the 21st century. However, they have evolved multiple social functions, including an efficient package for political arguments. They simply use a single image overlaid with a small number of words, but their ubiquity online suggests an oversized impact shaping political beliefs. Despite this ubiquity, quantitative and experimental research is lacking. The research presented here is two-fold. The first line of research is on the development of a large, annotated corpus of political memes shared on social media. The corpus is built to account for multiple dimensions of memes, such as their attempted form of persuasive argument. For example, memes can make appeals to group loyalty, cite statistics, or make use of analogies. The aim is for the corpus to be an open tool for our community of researchers. The second complementary line of research uses items from the corpus in human experiments to assess how they persuade and how this interacts with the politics of the meme-consumer. These experiments are identifying interactions in persuasion between the kind of argumentation and people's political affiliations. For example, self-identified conservatives were persuadable to liberal political positions by meme arguments via analogy, but only when the analogies stayed within certain semantic domains. Last, the presentation will discuss how these lines of research advance models of persuasion, and models of analogical thinking.

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Crowd-sourcing fact-checking on TikTok with partisan crowds

Sze Yuh Nina Wang

Combatting online misinformation is an increasing topic of research for both technology companies and academics. Traditional fact-checking approaches, while effective, are resource- intensive and slow, relying on professional fact-checkers to research individual claims. Some companies have shifted towards supplementing or even replacing professional fact-checkers with crowd-sourced fact-checking initiatives (e.g., Twitter/X's Birdwatch (Wojcik et al., 2022)). However, it is unclear whether crowd-sourcing initiatives are effective for politically divisive topics. Additionally, past work on the efficacy of crowd-sourced fact-checking focuses exclusively on news headlines and articles (e.g., Allen et al., 2021), while people are increasingly getting news from TikTok and other short-form video content (Leppert & Masta, 2024). This research assesses the efficacy of crowd-sourced fact-checking for short-form video content related to three politically contentious topics, and tests whether Republican, Democratic, and politically-balanced crowds are able to perform comparably to professional fact-checkers. These experiments demonstrate that crowd-sourced fact-checking varies in efficacy by topic both among laypeople and fact-checkers, and that Republicans showed poorer performance in identifying misinformative content.in an earlier reference and for citations with four or more authors.

Online communication about political narratives: how it works, and where we went wrong

J. Hunter Priniski

A hallmark of human cognition and culture, narrative-based communication is an immensely complex computational process that instills the causal, linguistic, and social logic of collective behavior. Today, digital media environments including online social networks heavily mediate communication about political narratives, directing individual and group learning about the causal and social relations governing abstract political events (e.g., the QAnon conspiracy theory, which purports to explain all other conspiracy theories). Understanding the web of cognitive, social, and algorithmic mechanisms facilitating online political communication can help us repair glaring problems within our democratic and political communication systems. In network experiments, a group of participants interact in a controlled online environment following a defined reward mechanism. Network experiments on narrative interaction can (1) steer computational models of group interactions to predict naturalistic collective behaviors (e.g., network simulations with LLM-based agents to predict the "causal scope" and social agreement among a distribution of human generated hashtags); and (2) highlight behavioral interventions that shift causal relations generated by humans and LLMs during networked group communication. Natural language embeddings can be additionally applied to predict linguistic/belief dynamics in real-world online networks (e.g., topics of tweets from QAnon supporters). While the accelerating political media spectacle is optimized to drown the public in a sea of conspiracy theories, identity politics, and algorithmically generated "slop" content, a *humanistic* scientific paradigm of online communication can help us break free from the political narratives plaguing our lives.

Leveraging the subreddit Change My View to understand and crowdsource belief change interventions

Zachary Horne

People often resist evidence that contradicts their beliefs, particularly on social and moral issues (Nicherson 1998). The work presented here examines how persuasion occurs on the Reddit forum *Change My View*, focusing on the role of evidence in attitude change. We find that while individuals are generally reluctant to revise their views, the amount of evidence provided in a discussion significantly predicts whether they change their stance. This suggests that although belief change is difficult, well-supported arguments can still be persuasive. Building on these findings, we also explore whether online discourse can inform the development of more effective educational interventions. Across three experiments, we find that arguments crowdsourced from *Change My View* are as effective—or more effective—at changing beliefs than interventions designed by academic researchers and published in top-tier journals. Finally, we discuss the development of argument generation at the *individual level* by examining uniquely persuasive Redditors, which provides further evidence of the kinds of evidence most likely to persuade an interlocutor. These results suggest that analyzing successful online arguments can help researchers refine interventions, improving strategies for correcting misconceptions in the real-world.

References

Allen, J., Arechar, A. A., Pennycook, G., & Rand, D.G. (2021). Scaling up fact-checking using the wisdom of crowds. *Science Advances*, *7*(36), 1-10.

Leppert, L., & Eva Masta, K. (2024). More Americans – especially young adults – are regularly getting news on TikTok. *Pew Research Center.*

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of general psychology*, *2*(2), 175-220.

Wojcik, S., Hilgard, S., Judd, N., Mocanu, D., Ragain, S., Fallin Hunzaker, M.B., Coleman, K., & Baxter, J. (2022). Birdwatch: Crowd Wisdom and Bridging Algorithms can Inform Understanding and Reduce the Spread of Misinformation. https://arxiv.org/abs/2210.15723