

THE HONG KONG POLYTECHNIC UNIVERSITY DEPARTMENT OF MANAGEMENT AND MARKETING

Departmental Research Seminar

Prebunking with Misinformation's Persuasion Playbook Improves LLM and Human Discernment of AI-Generated Claims Where Verification Fails

By

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Time : 10:30 am – 12 noon

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Abstract

How misinformation persuades has resisted large-scale analysis. Combining large language models with grounded-theory coding, we map the persuasion playbook of real-world misinformation: 214,646 fact-checked claims in 51 languages (2019--2024), annotated with a 48-strategy codebook organized into 13 groups under Cialdini's principles of social influence, information-manipulation tactics, and affective appeals. Authority and emotional appeals anchor the playbook, and the strategy mix shifts systematically across topics, languages, and channels. Briefing an LLM evaluator with this playbook improves discrimination of true from synthetic false claims about post-cutoff events, with the largest gains where the model verifiably lacks factual recall. In a pre-registered human experiment (N=749) on the same AI-generated claims, gains concentrate significantly on claims participants report as unfamiliar while average briefing effects are small and not significant. In machines and humans alike, strategy knowledge substitutes for absent verification capacity. The same knowledge helps an attacker craft synthetic misinformation more convincing to simulated evaluators, yet equipping the evaluator with it reverses that advantage. These results inform preemptive, strategy-level defenses against misinformation.

Prof. Tong Guo is an Associate Professor in the Marketing Department at Duke's Fuqua School of Business and the Department of Economics, and a faculty affiliate at Duke-Margolis Center for Health Policy. She studies information as a competitive instrument in marketing. Her research asks who actually gains when more information enters a market: whether transparency mandates discipline powerful players in healthcare, how digital signals move demand and what can be done when they mislead. She answers with causal inference, machine learning, and empirical IO methods applied to large-scale, real-world data, turning complex evidence into credible insight about economic and social behavior.

Prof. Tong Guo is a recipient of the MSI Young Scholar and finalist of Paul Green Award. She was also a faculty fellow at 2022 AMA Sheth Foundation Doctoral Consortium, 2022 ISMS Early Career Scholars Camp Fellow, the finalist of the 2018 UM ProQuest Distinguished Dissertation Awards, the 2017 AMA Sheth Foundation Doctoral Consortium Fellow, and the 2016 INFORMS Marketing Science Doctoral Consortium Fellow. She serves on the Editorial Board of Marketing Science.

All interested are welcome.



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