RESEARCH STATEMENT

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"Life is a perpetual instruction in cause and effect." - Ralph Waldo Emerson

OVERVIEW

I am interested in understanding how organizations impact the causal inferences of their employees. Causal inference is a core problem of organizational actors: deciding what is a cause and what is an effect is essential to not only understanding what is happening in organizations, but also forming a strategy about what to do next. Yet, there are two known facts about organizations and causal inference that are often not jointly emphasized in the current research. First, organizational research would tell us that organizations are structured and often operate in a structured environment. Second, work in causal inference would tell us that the structure of the world in which causality is observed is likely to greatly impact the inferences formed. The intersection of the structure of organizations with the impact of this structure on causal inference formation is the basis of my motivating research question: How does the structured world of organizations impact the causal inferences of organizational actors? Using logical and mathematical arguments, along with computational simulation and empirical analysis, I study the relationship between organizational structure and the causal inferences made within this structure. In pursuit of this interest over the past four years of my PhD, I have published two papers, and have four full working paper drafts.

MOTIVATION AND RESEARCH APPROACH

In my work, I argue that in structuring the work of their employees, organizations also inherently structure their experiences, which is likely to impact the causal inferences made by organizational actors in consistent and potentially problematic ways. Specifically, while the division of work may be necessary to completing the complex tasks of organizations, it also may be detrimental to the formation of correct causal understandings. This is particularly problematic if we consider that correct causal understandings are likely the antecedents to forming successful strategies, as in order to develop a plan about what to do next, employees must correctly assess what is currently contributing to organizational outcomes, whether positive or negative.

To the extent that this type of causal inference has been studied in organizations, it has been surprisingly focused on the ambiguity and individual-level variation that comes along with deciding what is a cause and what is an effect. While there is no doubt uncertainty and individual-specific variation in causal inference, work in causal induction would suggest that because both the environment and the organization are structured, the conditions for incorrect causal understandings may derive uniquely from features of the organization itself. My work contributes to bridging the gap between the structure of organizations and this structure's likely impact on causal inferences, suggesting that organizations are likely to systematically alter the inferences made by their employees, and that considering why and how this occurs is essential to understanding organizational performance.

My methodological approach to considering the impact of organizations on the causal inferences of their employees is uniquely suited to this task. Work in causal induction tends to rely on logical and mathematical arguments to form propositions for the likely outcomes of causal model formation. Organizational research tends to eschew these methods as less relevant to the complex and multi-faceted environment that face employees making inferences. While I

agree that logical and mathematical arguments often do miss the nuance of the organizational context, I nonetheless adopt these methods in my work, arguing that by adapting the assumptions of causal induction to the organizational context, I can maintain the analytical clarity of these causal inference methods without disregarding how important the organizational context is in determining the causal inferences formed by employees. In addition to my formal and simulation modeling approaches used in several of my working papers, I also acknowledge the power of data in exploring the reality of the hypotheses developed in my theoretical work. Thus, I also have work that uses a variety of other methods, such as lab experiments, lab-in-the-field experiments, and empirical data analysis, to test and contextualize the intuitions I develop theoretically.

The response to my work, in the publication of both an empirical and a theoretical piece, has taught me how to deeply engage in the theory and practice of employees interacting with their organizational context. And in continuing to present my core research, in the form of four working papers, the deep engagement with the question of how employees form causal inferences in organizations has encouraged me to keep pursuing my curiosity in how organizations impact the way individuals understand and engage with the world.

WORKING PAPERS

Below I outline my two solo-authored working papers, which represent two instances of unpacking the relationship between the structure of organizations and employee understandings.

First, in my solo-authored job market paper "*A Theory of Causal Explanations in Organizations: How the Structure of an Organization's Problem Can Generate Divergent Problem Explanations Under Limited and Divided Attention*", I develop a theory for how employees form causal mental models to explain organizational problems from the observation of factors in organizations. I first assume that a core way that organizations structure the experience of their employees is through limiting and dividing employee attention via the division of labor. Then, conceptualizing an organization's problem environment as a causal model of factor selection made by organizational actors that resulted in a problematic outcome, I consider how employees' attention might impact their ability to infer the causal structure of their organization's problem effectively. Developing a logical argument based on research in organizational theory and causal induction, I show that two features of the problem environment, its structure and its strength of interdependencies, determine when employees will diverge on explanations of organizational problems under the structure of work. Then, through a formal model, I provide evidence that if organizational problems are generated by a sufficiently interdependent causal chain of factors, organizational structure is likely to generate divergent explanations for employees within the organization, which might ultimately generate difficulty forming convergent strategies.

Second, in my solo-authored work "*Organizational Applications of the Ising Model*", developed from conversations at the Theoretical Organizational Models Society, I consider how I might harness the insights of phase transitions by the Ising Model of physics to understand how organizational constraints impact employee networks in surprising ways. The Ising Model was originally developed to measure how particles react when introduced to a magnetic field. Particles have spins, which can be thought of as preferences for alignment or misalignment, which interact both with other particles and the external magnet. The reason why this model may be so relevant for organizations, is it provides a way to measure how internal and external constraints, like network ties and organizational policies, may come together to produce

potentially surprising, but internally consistent results. For example, the Ising model can explain why a small, but deeply opposed, coalition to an organizational policy may generate an employee network that is uniformly opposed to the organization's policy. It can also predict why in high uncertainty organizational environments, tightly coupled networks of employees may equally generate either strong support or strong opposition to organizational constraints. The general imagery that the Ising model provides to organizational scholars is that of a magnet acting on its employees, where the application of a single aligned force by the organization may generate an unexpected set of employee reactions due to the internal constraints of organizational networks. Similar to the introduction of the NK model to organizational scholars, where walking across a performance landscape is a particularly useful metaphor for understanding search for organizational solutions, the Ising Model provides the opportunity for organizations to understand their high-level policy and reorganizational choices as a magnetic force on the internal network of employees, and consider how organizational uncertainty and alignment preferences may ultimately generate employee responses.

These two solo-authored works are complemented by two co-authored empirical projects to round out my four working papers. Briefly, as a first-author working with an interdisciplinary team of micro and macro organizational scholars, our work "*Does Collective Mental Time Travel Improve the Performance of New Self-Managed Teams?: Evidence from a Startup Competition*" uses a 'lab-in-the-field' experiment of randomly assigned start-up founders to show how the understandings these start-up founders developed through collectively considering a shared future generated improved start-up performance. Second, in work in collaboration with Jeff Polzer at Harvard Business School titled "*When Meetings Multiply: The Consequences of Collaboration Overload*," I work with large meeting datasets to consider how the proliferation of meetings in an organization as a function of meeting size, length, and duration, generates declines in performance.

OUTLINE OF FUTURE WORK

My current work all points towards the goal of understanding how the environment that structures our experience impacts our ability to form understandings and how these understandings in turn impact our experience of the environment. I hope my work in the future can show how organizations are social structures that interact with reality in order to shape human understanding, ultimately providing tangible recommendations to organizations who seek to generate understandings that are consistent with reality and that produce performant outcomes. Aligned with this goal, I have several early-stage projects that I am pursuing.

First, in collaboration with my advisor Amir Goldberg, we are extending work both in my job market paper and in our co-authored piece on the "*Sociology of Interpretation*" published in the *Annual Review of Sociology*, to develop a theory of narratives as causal models made relative to interpretations. Drawing on work from the semantic theory of possible worlds, we argue that narrative must be understood relative to an interpretation and formalize an analytical strategy for considering narratives in this way.

Next, I have been jointly pursuing a project on how and to what extent large language models generate representatively diverse sets of mental models. While we started engaging with BERT and found preliminary results that show this model overweighs certain population's representations relative to expectations, we have currently turned our attention to ChatGPT and are looking to test how large language models can help or harm us in the study of how a population represents concepts. Finally, I have always found the way that individual identities

are represented and aggregated to group-level characteristics to be an interesting case of human understanding and generalization. In an early-stage solo-authored paper, I consider how the representation of genders in a population might lead to statistical discrimination due to identity-specific noise even when the distribution of ability in the populations is exactly equal.

Overall, my future work trajectory considers a wide variety of phenomenon and utilizes a wide range of methodologies, however, each project follows the arc of my research interest, which is to understand how the structures of our organizations and societies lead to our collective understandings or misunderstandings. As I continue to enjoy learning and growing as a scholar, one of my favorite parts of this adventure has been the opportunity to work with other academics and to teach and learn in the classroom. If all research has a certain self-learning component, then I hope my research brings me into a new organization with a new set of colleagues, students, and experiences that continue to develop my understanding of our beautiful and complex world.