<center>**Research Statement** – Patrick R. Heck</center>

The goal of my research is to understand the causes and consequences of social judgments and decisions made under uncertainty. As a social psychologist with postdoctoral experience in behavioral science, I am interested in how people attempt to 'get ahead' as individuals while still finding ways to 'get along' with others. Often, doing so entails a tradeoff between conflicting motives to benefit oneself or benefit others. For example, how do we choose between expressing braggadocio and humility? Between a prosocial option and a selfish one? Between learning or ignoring important but potentially painful information, like the result of a genetic test? Studying social decision-making can improve not only the efficiency and rationality of human behavior, but also the subjective experience of happiness, agency, and well-being. With these goals in mind, I have developed three lines of research that borrow from social and cognitive psychology, economics, and statistics to better understand how people navigate a complex social world.

1. Overconfidence and Self-Enhancement

Although most people claim to be better than average, not everyone can be. Often, however, many people who claim to be better than others are telling the truth. My primary line of research aims to separate true self-superiority claims from false ones; to separate confidence from *over*confidence. To this end, I developed a measurement tool to distinguish accurate from inaccurate self-enhancement (Heck & Krueger, 2015; Krueger, Heck, & Asendorpf, 2017). Here, I found that when knowledge can be measured objectively, most people who claim to be better than average are accurate in their confident, self-enhancing claims. Additionally, people who learn that their confident claim was wrong projected this result onto others by estimating that most others would, like them, be overconfident about their own knowledge (Heck & Krueger, *under review)*. I have shown that more educated people are more likely to claim above-average intelligence, and that these claims are likely true (Heck, Simons, and Chabris, 2018). Finally, I found that claiming to be above average is seen by everyday observers as rational and competent, yet condemned as hubristic and immoral (Heck & Krueger, 2016). This 'humility paradox' in self-perception raises an important guiding research question: in an uncertain social situation, is it better to express confidence or remain humble?

I aim to extend this line of research in three directions. First, the overconfidence measurement tool I developed is limited to observing a single decision. However, by taking in multiple observations across knowledge domains, this tool is capable of capturing individual differences in overconfidence to predict future behavior and important life outcomes, including health, financial decision-making, happiness, and well-being. Given a series of objective tasks, for example, we can ask whether consistently overconfident people are happy and well adjusted, or led astray by their lack of self-knowledge. Second, I am interested in developing a theory of interpersonal self-enhancement, or, bragging. What are the benefits and costs of boastful versus humble behaviors? Here, I am interested in exploring an understudied yet important moderating aspect of bragging about oneself: gender. Finally, I am currently developing a research project that will survey 85,000 tournament-rated chess players to explore the associations between skill, confidence, practice, and improvement over time. This project will allow us to answer whether skill-based overconfidence persists despite the presence of objective, accurate, and public information about players' own ratings and rankings (Heck, Simons, Benjamin, & Chabris, *in prep)*. Additionally, we will organize and publicly share this large dataset so that other interested researchers can generate and test hypotheses of their own.

2. The Volunteer's Dilemma

In my second line of research, I study volunteering. How do people reason when choosing whether to help others at a cost to themselves? What are the reputational consequences of standing idly by while someone else volunteers? In contrast with the more familiar Prisoner's Dilemma, the Volunteer's Dilemma requires players to coordinate to obtain the best outcome. Here, one person must pay a small cost (e.g., calling the utility company during a power outage) to benefit those around them (e.g., restoring electricity to the neighborhood). Coordinating to solve this task is difficult, because excessive volunteering is an inefficient use of resources and

can occasionally *reduce* group gain (e.g., by tying up the phone lines). My work in this area shows that people reason egocentrically to solve this dilemma: players tend to pay attention to their own possible outcomes while ignoring the outcomes available to others (Krueger, Heck, & Wagner, *in press*). Additionally, observers view the decision to volunteer as both moral and rational, while harshly disparaging defection (even when another person has already volunteered) (Heck & Krueger, 2017). I am interested in asking how the decision to volunteer or defect is punished or rewarded by others in more realistic contexts, and in developing more efficient social systems that may be able to reduce costly overvolunteering and miscoordination.

3. Information Avoidance and Deliberate Ignorance

During my postdoctoral fellowship, I began a new line of research to study when and why people choose to ignore useful but potentially aversive information about themselves. I draw from social and health psychology to study the psychological, economic, and health consequences of this phenomenon. One aspect of this research asks when and why people choose to avoid their genetic predisposition for medically actionable diseases (like breast cancer) or nonactionable ones (like Alzheimer's disease). Here, I am developing lightweight social interventions (i.e., nudges) to attempt to reduce costly information avoidance in the health context (Heck & Meyer, *in prep*). I am also interested in the social and moral consequences of choosing ignorance. In a series of studies, I found that people view a target's decision to avoid genetic health information as both irrational and immoral, suggesting that information avoidance is viewed as both norm-violating and unethical. This result suggests a degree of normative social pressure that may be able to encourage learning about oneself, including receiving genetic screening for health conditions (Heck & Meyer, *under review*).

I am also interested in expanding this line of research to contexts outside of health and genetic testing. How does information avoidance influence strategic social interaction, negotiation, moral judgments and blame, competitive performance, and the self-image? As Gigerenzer and Garcia-Retamaro (2017, p. 195) concluded on the topic: "The default is that valid information should be sought for and used. Not wanting to know, in contrast, appears counterintuitive and irrational." My research in this area suggests that information avoidance may not be as clear a default as economic and political theorizing proposes.

Research Methods and Statistics

My interest in teaching and interpreting research methods and statistics has generated a peripheral line of research concerned with inductive statistical inference. Here, I ask how useful everyday statistical tools are for drawing effective and accurate inferences from data. In papers published in psychology and statistics journals, I explored how well the *p*-value produced by Null Hypothesis Significance Testing can predict the probability of a hypothesis. Drawing from various schools of statistical thought (Fisherian, Neyman-Pearsonian, and Bayesian), my work in this area demonstrates that the *p*-value can serve as a useful heuristic tool in realistic contexts (Krueger & Heck, 2017, 2018, *in press*; authors contributed equally to these papers). I am interested in pursuing questions of when statistical inferences may be misleading or harm research practices, and how scientists, students, and the public interpret probability and statistics.

Open Science and Experimental Practice

I strive for my work to be transparent, reliable, and replicable. To achieve this, I publish my data and code on the Open Science Framework. I am committed to effective and ethical research and data practices, including preregistering experiments and running adequately powered studies. Typically, my own work involves first documenting or observing a finding, then eliciting participants' beliefs and intuitions about that finding, and finally, replicating and publicly archiving my own research. My interest in open science and reproducibility in psychology recently led to a published replication attempt of a classic finding in social psychology: that holding a warm object causes attitudes and behavior toward others to become interpersonally 'warmer' in nature (Chabris, Heck, Mandart, Benjamin, and Simons, *in press*). Transparency, replication, and reproducibility are critical to maintenance and growth in our discipline, and I strive to bring these values into the laboratory and the classroom.