

# Psychology and Experimental Economics

## A Gap in Abstraction

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**ABSTRACT**—*Experimental economics and social psychology share an interest in a widening subset of topics, relying on similar lab-based methods to address similar questions about human behavior, yet dialogue between the two fields remains in its infancy. We propose a framework for understanding this disconnect: The different approaches the disciplines take to translating real-world behavior into the laboratory create a “gap in abstraction,” which contributes to crucial differences in philosophy about the roles of deception and incentives in experiments and limits cross-pollination. We review two areas of common interest—altruism and group-based discrimination—which demonstrate this gap yet also reveal ways in which the two approaches might be seen as complementary rather than contradictory.*

**KEYWORDS**—*experimental economics; experimentation; deception; incentives*

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At their core, economics and psychology share a common and overriding desire to understand human nature, but communication between the two is still in its infancy. Psychologists have not traditionally been interested in the efficiencies and design of markets, for example, while experimental economists have not customarily focused on emotion, memory, or implicit cognition. Increasingly, however, the two fields have begun to devote attention to the same problems, a trend that has frequently been driven by both fields’ often-unstated desire to address current social issues and influence public policy. In domains such as racial and gender discrimination or altruism and charitable giving, each field has developed an impressive body of knowledge. Even in these cases, however, the work of the other discipline often goes unrecognized, despite the obvious fact

that combining knowledge has the potential to offer a deeper understanding of these social issues and therefore better suggestions for successful real-world policy interventions.

In this short article, we propose a framework for understanding why, even when psychologists and economists turn their attention to the same domain, it often seems that they hold quite different views of how best to study and understand human behavior. We suggest that this disconnect stems in part from the different approaches the two fields take to abstracting real-world problems into controlled laboratory experiments; this creates a “gap in abstraction” that underlies key differences of opinion about the role of deception and incentives in research, a key barrier to cross-pollination. Through case studies on altruism and gender discrimination, we illustrate how this gap has led the two disciplines to devise such different laboratory experiments—psychologists using deception and economists using incentives—to study the same problems. Ironically, despite the disagreements that deception and incentives foster, the two are often used by researchers for the same purpose: to make laboratory experiments more directly relevant to real-world behavior. Finally, we stress how understanding that the gap is driven by the different approaches the disciplines take to theory-building—rather than by the random whims of researchers—can increase the possibility of fruitful communication and help to show that the two approaches may be complementary rather than contradictory.

### ABSTRACTING BEHAVIOR FROM THE WORLD INTO THE LABORATORY

When social scientists attempt to study any real-life topic by bringing it into the lab for scrutiny, they start by deciding two things: which aspects of that phenomenon need to be represented in the experiment to provide meaningful insight, and which aspects can be safely omitted, given the constraints on what can be accomplished in any one experiment. After these decisions have been made, the next set of decisions facing the social scientist is how to translate the chosen aspects into fea-

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tures of the laboratory session—that is, operationally defining the variables. It is at these two decision points (which aspects need to be translated, and how to operationalize them) that psychologists and economists begin their divergence.<sup>1</sup>

When economists bring a phenomenon into the lab, they engage in abstraction in order to create laboratory tasks that capture the essential elements of that phenomenon. For economists, these elements are derived from their general normative theory—that behavior is driven by utility maximization. As a result, economists place a great deal of emphasis on ensuring that the incentives in an experiment represent the incentives in the real world and that participants have full information about the monetary costs and benefits associated with different courses of action, so that they can maximize their utility (payment).

For psychologists, people's decisions are sensitive to contextual factors of specific situations, and they therefore select manipulations—from smoke pouring into rooms to subliminal primes—that alter people's goals in the way that actual situations might alter those goals in the real world. As a result, they are very careful in experiments to represent those contextual aspects that seem most crucial to the real-world occurrence of the specific phenomenon under investigation. As part of this effort, psychologists often use cover stories, confederates, and deception, as they try to ensure that people are acting in response to those factors as they would in the real world.

As this comparison illustrates, one of the most important differences between the two disciplines is their approach to abstracting phenomena from the real world and distilling them into laboratory experiments. For experimental economists, having a general normative theory allows for very general abstraction: If people maximize utility in response to the costs and benefits of different courses of action in the real world, then as long as incentives are similarly aligned in the laboratory, behavior in the lab should theoretically translate back to many real-world situations (see Levitt & List, 2007). For psychologists, on the other hand, the process of abstraction involves understanding how different contexts impact behavior in the world, then recreating the essential elements of those contexts in the laboratory in order to learn how they impact behavior in the real world. These different theoretical orientations result in quite different experimental instantiations, but the goal of both approaches is strikingly similar: To ensure that the results of laboratory experiments are relevant to real-world situations.

### THE GAP IN ABSTRACTION AND THE ROLES OF DECEPTION AND INCENTIVES

Beyond being merely a description of methodological differences between the two disciplines, we suggest that this gap in

abstraction is also at least partly the reason psychologists and experimental economists fundamentally differ on the role of (or need for) both *deception* and *incentives* in experiments. By illustrating how the differences of opinion about each is caused by differences in abstraction—rather than, for example, the fact that psychologists enjoy lying to people and economists enjoy paying them—and by stressing that these techniques are often used to accomplish the same goals, our hope is to offer each discipline a better understanding of the position of the other discipline on these sometimes controversial experimental approaches.

#### Deception

As noted earlier, because psychologists want to create laboratory proxies for situational pressures they deem central to phenomena in the real world, deception is not just an option but in many cases a requirement (see Kimmel, 1998). Participants walking into a psychology experiment have to be given a cover story and a situation into which they are “transported,” such that their behavior in the lab situation resembles the behavior they might display in the real-world situation. For psychologists, failing to use deception can mean that contextual cues important to real-world situations are not represented in the experiment; if this occurs, participants' behavior is uninformative about their real-world behavior because they may be behaving as they believe they should within the contrived experiment rather than as they would in reality. For economists, on the other hand, there is no need for deception because the specific context is abstracted away, causing them to focus only on the costs of deception: the suspicion and mistrust that deception can evoke in participants. For economists, deception merely masks the true nature of the experiment, impeding participants' ability to make informed decisions about their roles, payoffs, and rules. As a consequence, in economics experiments, deception would make the experiment *less* like the real world rather than more. Indeed, experimental economists' aversion to deception is so strong that many journals have a blanket “no deception” policy, even though little research has assessed the actual impact of deception (Jamison, Karlan, & Schechter, 2007).

#### Incentives

Another consequence of the gap in abstraction is the difference of opinion regarding the role of incentives. For economists, in order to motivate participants to behave “normally,” incentives need to be explicitly defined as an integral part of the experimental design so that participants can fully evaluate the costs and benefits of each decision, just as economic theory predicts they would in the real world (Edwards, 1961; Hertwig & Ortmann, 2001). Psychologists, on the other hand, tend to believe that the costs and benefits of different courses of action in the real world are often unclear, such that defining incentives clearly can make laboratory situations *less* like real-world situations.

<sup>1</sup>Academics in both disciplines may have forgotten that learning which aspects of the world needed to be translated to the lab occurred only when they reached graduate school. Mastering which aspects were most important was a learning process, not a foregone conclusion, and different training might easily have shaped them to value different methods.

Psychologists therefore deliberately leave participants in the dark as to the correct course of action, and while this can lead to greater variance in participants' responses to a given manipulation, psychologists believe that this kind of variability characterizes behavior in the real world. Therefore, failing to define incentives clearly is not a limitation but an important aspect of understanding how most people behave most of the time.

Through two case studies below—altruism and gender discrimination—we show how the gap in abstraction contributes to the development of different paradigms by the two disciplines, as well as to different approaches to incentives and deception. Most importantly, we show that psychologists' use of deception and economists' use of incentives often reflect methodological choices made in pursuit of the same goal—making behavior in contrived laboratory situations relevant to real-world situations—and as such are not as dissimilar as they may appear.

### CASE STUDY 1: ALTRUISM

Economics and psychology have both devoted a great deal of attention to altruism (the prisoner's dilemma, a classic test of competing social desires to compete and cooperate, is one of the few paradigms that both disciplines have used) but have taken markedly different approaches to abstracting altruism from the field to the lab. In the classic Darley and Latané (1968) study, participants walked down an alley on their way to another experiment—for which they were told they were either late or on time—and passed by a confederate slumped in a corner. Psychologists selected an aspect of helping situations seen to be most important in the real world—time pressure—as the key variable of interest, leaving the exact incentives for helping ambiguous. Experimental economists, in contrast, have created paradigms such as the dictator game, a task in which one player is given a sum of money and decides how to split that money with a partner. This level of abstraction is ideal for economists, distilling the essence of altruism by capturing the tradeoffs individuals make between their own well-being and that of others while placing the action in concrete economic terms. Despite these differences, there are key similarities between the paradigms. While most people give some money to their partner in the dictator game (Camerer, 2003), changing the incentives not to help—for example by increasing anonymity (Dana, Cain, & Dawes, 2006)—leads to more selfish behavior; in the Darley and Latané (1968) experiment, many participants stopped to help, but changing incentives not to help—by increasing time pressure—similarly led to more selfish behavior. Thus, though psychologists generally have studied why people don't help enough and economists have tended to study why, given a lack of incentives, people help at all (Fehr & Schmidt, 1999; Loewenstein, Thompson, & Bazerman, 1989), we suggest that once differences in abstraction are factored out, it is likely that the fields can use each other's findings to build a better and more nuanced model of altruism.

### CASE STUDY 2: GENDER DISCRIMINATION

Group-based discrimination, as in the case of women's underperformance in traditionally male-dominated fields, is another area to which both disciplines have devoted a great deal of attention, and another in which the gap in abstraction is apparent. Experimental economists have abstracted the issue into the lab by creating competitive tournaments in which the task is to solve complex mazes for monetary incentives, and have tended to show that women underperform because they “opt out” of competing with men, perhaps due to the costs of violating gender roles (Gneezy, Niederle, & Rustichini, 2003). Psychologists, for whom part of the gender gap in achievement is due to minority groups' fear of confirming a negative stereotype about their group when taking such tests (“stereotype threat”; Steele, 1997), have used as their experimental materials the actual questions from real-world standardized tests of ability and have manipulated factors such as the number of males present while women are taking a test, or whether the scores will be made public. While not financial in nature, these manipulations nonetheless serve as (negative) incentives for women, leading to worse performance (Inzlicht & Ben-Zeev, 2000). As with altruism, the fields have arrived at similar conclusions despite their different approaches: Women do particularly poorly in situations that are counter-normative (e.g., competitive environments or “hard” science domains).

### CONCLUSION

The lack of communication between psychology and economics is particularly unfortunate because the fields share interest in similar topics that are of clear importance to public policy and social welfare; at the same time, however, the gaps in approach are substantial and epistemological, so bridging them is not trivial. We hope that providing a framework for the differences between the fields—one that underscores that the decisions made by different social scientists (the use of deception by psychologists, the focus on incentives by experimental economists) are not random whims but a result of a careful approach to understanding human cognition and behavior—will foster more fruitful communication. Experimental economists might shift from asking whether deception is good or bad—a moral question—to exploring whether deception helps or harms social scientists' ability to understand human behavior. Psychologists' aversion to incentives, on the other hand, might be addressed by taking a broader view of what experimental economists are trying to accomplish with them: making people care about their behavior as much in the lab as they do in the real world. Psychologists might then realize that they frequently do build incentives into their experiments without using that terminology. In Neuberg and Fiske (1987), for example, making people's outcomes on some task dependent on accurately understanding a partner incentivized them to view that partner in less stereo-

typic terms. Rather than dismissing experimental economists' reliance on a rational model, psychologists could benefit from a formal approach that strives to integrate experimental results into an overarching model; similarly, rather than viewing psychological findings as a mere litany of effects specific to unrelated phenomena, experimental economists could incorporate the notion that psychological processes lead to reliable, predictable constraints on decision making. The areas we have outlined—altruism and group-based discrimination, both domains of interest to both fields and of importance to social welfare—offer just two of many opportunities for integration that we hope will be pursued.

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### Recommended Reading

- Camerer, C.F., Loewenstein, G., & Rabin, M. (Eds.). (2003). *Advances in behavioral economics*. Princeton, NJ: Princeton University Press. A collection of the most influential papers in behavioral economics of the last 20 years.
- De Cremer, D., Zeelenberg, M., Murnighan, J.K. (Eds.). (2006). *Social psychology and economics*. Mahwah, NJ: Erlbaum. An edited volume that reviews in more detail areas of investigation common to psychologists and economists.
- Kagel, J.H., & Roth, A.E. (Eds.). (1997). *The handbook of experimental economics*. Princeton, NJ: Princeton University Press. A comprehensive overview of the field of experimental economics.
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