

UNDERSTANDING AGENCY IN SELF AND OTHER:  
A META-COGNITIVE PERSPECTIVE

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

Erik Grant Helzer

August 2012

© 2012 Erik Grant Helzer

UNDERSTANDING AGENCY IN SELF AND OTHER:  
A META-COGNITIVE PERSPECTIVE

Erik Grant Helzer, Ph. D.

Cornell University 2012

Information about intentions, aspirations, and introspections (i.e., *agentic information*) is more central to people's representation of themselves than to their representations of other people. In particular, people think of themselves, relative to other people, more as free agents, whose intentions and aspirations have the power to shape the course of their lives with minimal influence from extraneous sources. In six studies, I explore the nature of this self/other asymmetry and the factors that give rise to the conception of one's own decisions, relative to those of the average person, as more *exogenous* (i.e., as arising from more active, unconstrained choice). The first two studies provide evidence that, relative to how they view others' decisions, people see their own daily decisions more as the product of active choice. Studies 3A and 3B demonstrate that people see their own decisions, relative to the average person's, as freer from extraneous influence, and that this estimate for the self overestimates actual decision exogeneity. The final two studies test a proposed explanation for the illusion of exogeneity: The meta-cognitive experience of indecision. When simulating the decision-making of a known other, people experience less indecision than when they decide for themselves. They see others' decisions as starting from a more biased point and progressing faster than their own decisions. This difference in meta-cognitive experience provides one explanation for why people remain unaware of extraneous constraints on their own decisions, while maintaining relative accuracy about the extent to which these variables exert a direct impact on others.

## BIOGRAPHICAL SKETCH

Erik Helzer, long-time appreciator of music, baseball, happy hour, and irony, was born in Portland, Oregon. He attended Oregon State University, where he earned degrees in philosophy and psychology, and developed what he suspects will be a life-long love for using psychological science to explore philosophical questions about human nature. In 2007, he loaded many of his worldly possessions in the back of his friend's station wagon and drove cross-country to begin graduate school at Cornell University. While at Cornell, he forged a life-long bond with his office mate, and the two were married in July of 2011. They take their next steps, together with their gray cat, Elmer, to North Carolina, where Erik will begin a post-doctoral research position at Wake Forest University.

## ACKNOWLEDGEMENT

My life has been filled with a dizzying amount of good fortune and it seems unlikely that without any of the following people I would be where I am today. Beginning with my parents, who did and still do provide me with every opportunity and every encouragement to grow, learn, and forge my own way in life, I am unceasingly grateful. To my family, who supply the firm base from which I feel comfortable and unafraid to explore new territories in life, I give heartfelt thanks. To teachers along the way, formal and informal, who have illuminated the value of education and of keeping one's eyes open to the world, I say thank you for providing me with wisdom in addition to knowledge.

At Oregon State University, Bill Uzgalis instilled in me the importance of a philosophical outlook on life and an appreciation of good old fashioned empiricism. John Edwards and Frank Bernieri inspired me to pursue social psychology; without their encouragement I am sure that none of this would have come to be. Jennifer Connor-Smith patiently allowed me to learn from my mistakes, and guided me to write the first empirical paper I ever published.

At Cornell, I have been enriched by an incredible cast of characters. In particular, my advisor, David Dunning, has never let me lose sight of the forest for the trees, and has imparted valuable lessons about the importance of careful and programmatic research. From Tom Gilovich, I have learned as much about psychological science as I have about what it takes to be an effective mentor and valued colleague. David Pizarro has been a wonderful collaborator and friend. The graduate students in the program, past and present, have been my family-in-exile for

the last five years, and I will miss them. Thanks also go to the Institute for Social Science, which funded much of the research in this dissertation.

Finally, to Jun, who has given me without question the most important, life-changing, and wonderful gift of all.

## TABLE OF CONTENTS

Biographical Sketch	iii
Acknowledgment	iv
Table of Contents	vi
List of Figures	vii
List of Tables	viii
Chapter 1: Introduction	1
Chapter 2: The self as an exogenous agent	16
Chapter 3: Perceptions of exogeneity for self and other	28
Chapter 4: What gives rise to the sense that decisions are exogenous?	39
Chapter 5: General Discussion	63
Appendix	83
References	87

## LIST OF FIGURES

Figure 1	Two models of choice: exogenous (panel a) and endogenous (panel b). Dark lines represent direct influences between variables. Dotted lines represent indirect influences between variables.	6
Figure 2	Decision progress for simulated decisions of self or a friend by amount of information seen, Study 4.	44
Figure 3	Degree of bias ( <i>decision lean</i> ) in the likelihood of choosing one partner relative to the others in simulated decisions for self and friend by amount of information seen, Study 4.	46
Figure 4	Decision progress for simulated decisions of self or a friend across rounds of information, Study 5.	55
Figure 5	Meta-cognitive indecision partially mediates self/other differences in decision exogeneity, Study 5. Standardized beta-weights are displayed.	57
Figure 6	Relationship between participants' perceived decision progress (after learning the stance of their party) and their actual progress toward a decision, Study 5. The reference line is depicted in light gray.	59



## LIST OF TABLES

Table 1	Participants' mean ratings (and standard deviations) of the amount of passive versus active choice involved in 14 daily decisions, Study 1. Numbers higher than zero indicate that participants saw their decision as the product of more active choice, relative to the decision of another Cornell student.	20
Table 2	Participants' ratings for endogenous versus exogenous construal of conformity behavior, Study 2. Higher numbers represent a preference for more exogenous construal of conformity.	25
Table 3	Actual and forecasted effects of majority opinion on the decisions of self and other, Studies 3A and 3B.	36
Table 4	Arguments in favor of the AJA and arguments in opposition to the AJA, Study 5. Participants first read arguments that supported their [their friend's] party's stance. They then read arguments against their [their friend's] party's stance.	50

## Chapter 1

### Introduction

There is mounting evidence that people see themselves, more than they see other people, as the masters of their own fate. People think they have more free will in their own lives than other people do (Pronin & Kugler, 2010). They feature information about intentions (Koehler & Poon, 2006; Kruger & Gilovich, 2004), aspirations (Helzer & Dunning, 2012), plans (Buehler, Griffin, & Ross, 1994), potential (Williams, Gilovich, & Dunning, 2012), and hopes and dreams (Williams & Gilovich, 2008) more in their representations of self than in their representations of other people. When looking at themselves, people see comparatively more potential for agentic behavior – i.e., behavior that allows for the active shaping of one's life – than they see in other people, something Helzer & Dunning (2012) referred to as an *agency bias*. The studies presented herein attempt to explore the nature of this bias in self- and social-understanding and to shed light on some of the cognitive mechanisms that give rise to the illusion of asymmetric agency for self and other.

To understand how, exactly, self and other are seen as differing in their capacity for agency, consider the following attributional trade-offs documented in past work. People place more emphasis on intentions and desires when explaining the causes of their own behavior than when explaining another person's behavior (Pronin & Kugler, 2010). Concurrently, they de-emphasize the impact of variables that may constrain their own capacity for freely-chosen action, while remaining aware of the constraints these same variables place on others' free choice. For

example, people underestimate the impact that situational forces can have on their own behavior, but anticipate the influence of these same forces on others (Balcetis & Dunning, in press). People are also less aware of bias in their own decisions than they are the decisions of their peers (Pronin & Kugler, 2007). They downplay the importance of past behavior when considering their own future achievement potential, though they attend to this same information in others (Helzer & Dunning, 2012). Finally, people seem less aware of when they, themselves, are susceptible to peer influence (Pronin, Berger, & Molouki, 2007) or ulterior motives (Epley & Dunning, 2000), but show comparative insight into how these same forces can unwittingly determine others' decisions, undermining their capacity for free choice.

The guiding idea that permeates the studies that follow is that people feel they are more *exogenous* decision-makers (Hagmayer & Sloman, 2009) than others are. By *exogenous*, I mean that people see themselves, compared to others, as agents who play a more active role in shaping the course of their lives, and whose decisions are comparatively freer from direct extraneous influence<sup>1</sup>. By contrast, people understand others' decisions and behaviors more in terms of the broader social-psychological context from which they emerged (i.e., more *endogenously*), and less in terms of the agent's independent, exogenous choices. Because they fail to register the impact of these same extraneous variables on their own decisions, people live with the illusion that their own choices and decisions are freer than those of people in general (cf. Pronin & Kugler, 2010).

In Chapter 2, I explore the first premise of this argument. Studies 1 and 2 test the extent

---

<sup>1</sup> I use the term “extraneous influence” throughout to denote any causal factor that might exert an influence upon an agent's choices and decisions that is itself not a feature of the agent's willful choice. This includes factors that are external to the agent, such as peer influence, norms, and situational forces. Though not directly tested here, it may also include forces within the agent that nonetheless limit the agent's free choice (such as her biases, competing motivations, and habitual behaviors).

to which people see themselves, relative to others, as active authors of their lives. In both studies, participants considered a series of daily decisions, and indicated that their decisions, relative to those of another person, involved more active choice and deliberation. Chapter 3 explores the second premise of the argument; namely, that people overestimate the extent to which their own decisions and choices are exogenous. In these studies, participants estimated the impact that extraneous influences would have on their own decisions, as well as the impact these influences would have on the decisions of another person. Going beyond a basic self/other difference in perceived impact of these influences (Pronin et al., 2007), the studies in Chapter 3 assessed the accuracy of these beliefs in order to determine whether the amount of exogeneity seen in self or other proves more insightful with regard to actual behavior.

Chapter 4 examines the source of the illusion of exogeneity. In contrast to past work related to this question, which emphasizes the relative centrality of introspective information to representations of self and other (Pronin, 2009; Pronin & Kugler, 2007, 2010), I begin with the premise that asymmetries in decision exogeneity reflect differences in the meta-cognitive experience of decision-making. In other words, when people ask themselves whether their own or another person's decision was free from extraneous influence, they start by “trying on” the decision-making that they or the other person went through to arrive at their conclusion. Study 4 demonstrates that the meta-cognitive aspects of this decision simulation are different, depending upon whether one is simulating one's own or a known other's decision.

Study 5 ties these differences in meta-cognitive experience to self/other asymmetries in decision exogeneity. To preview the findings somewhat, people experience the decisions of a known other as starting from a more biased point and as progressing toward a conclusion more

quickly than they experience their own decisions. Thus, others' decisions are experienced as more “foretold” from the very beginning than one's own. This difference serves as a partial explanation for why people perceive their decisions as freer of extraneous influence. Data from Study 5 also allow for an exploration of accuracy with regard to this belief. Do people have any insight into their actual decision progress? Leaning on early speculations from Griffin and Tversky (1992), I tested whether people underestimate just how far along their decision-making actually is – and thus, just how much freedom they have at any one point to choose otherwise.

*Self/other asymmetries in free will: Conceiving of the self as an exogenous agent*

The term *free will* is, by all counts, a conceptual morass (Dennett, 1984), and so to say that people conceive of themselves as having more free will than other people requires some clarification. Pronin and Kugler (2010) operationalized free will along a number of classic attributes. They found, for example, that people believed their own past and future were less predictable than those of another person. Participants also saw more possibilities in their own future than the future of a peer; and they attributed behavior to intentions and desires more for the self than for other people.<sup>2</sup>

Another sense in which people may see themselves as possessing more free will than others is in conceiving uniquely of their own choices as *exogenous* causal variables (Hagmayer & Sloman, 2009). Consider the following two ways in which people may think of a choice. On one hand, people may see choice as an *endogenous* property of the decision-making context: they see (as social scientists might, for example) choices as emerging from a stream of social-

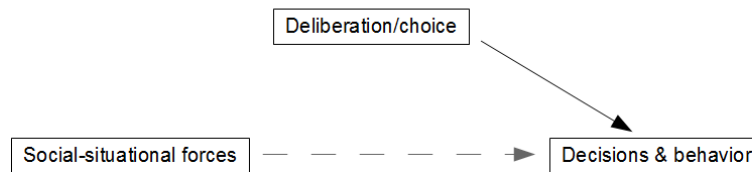
---

<sup>2</sup> Note that only the last of these conceptualizations of free will has anything to do with agency for self over other. This is notable given that less predictability and more numerous possibilities are not themselves indicative of the kind of free will that seems most important to people – i.e., the capacity to actively author the course of their lives.

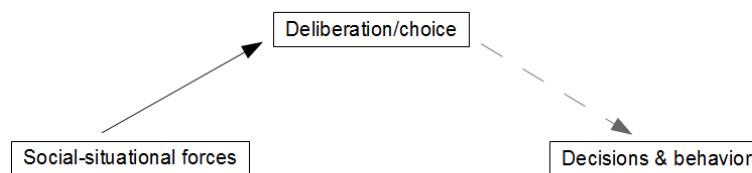
situational forces, each of which helps determine the eventual decision. On the other hand, people may see choice as an *exogenous* variable – a carefully conceived decision that exists independent of the broader decision-making context and serves to *intervene* upon the external world to shape a person's fate (see Hagmayer & Sloman, 2009 for further discussion).

Figure 1 presents a rough depiction of these different models of choice. Panel A represents the exogenous model of choice. In this model, a person's deliberation and choice are conceived of as independent inputs into a person's behavior, inputs that are themselves largely unswayed by the person's social-psychological context (situational constraints, habits, peer influence, biases, and ulterior motivations, etc.). Deliberation and choice exert a *direct* influence on the person's eventual behavior, whereas extraneous factors (labeled social-situational forces) exert only an *indirect* influence on behaviors and decisions. Contrast this with the endogenous model of choice depicted in Panel B. In this, a person's broader social-psychological context exerts a direct influence on the choices the person makes; these deliberative states and choices are then only indirectly related to the ultimate decision that is made.

*Panel a*



*Panel b*



**Figure 1:** Two models of choice: exogenous (panel a) and endogenous (panel b). Dark lines represent direct influences between variables. Dotted lines represent indirect influences between variables.

Using a series of scenario studies, Haggmayer and Sloman (2009) illustrated the sense in which choices may be viewed as exogenous. In one study participants were told that exercise is associated both with decreased food intake and with the presence of a specific neurotransmitter; more specifically, that having a particular neurotransmitter causes both greater exercise and decreased eating.<sup>3</sup> Participants were then asked to imagine that a friend of theirs had recently started exercising and eating less, and that the increase in exercise was due to one of three causes. In the “choice condition,” the person had chosen to exercise; in the “intervention condition,” the person had been forced into exercising; in the “observation condition,” the cause

<sup>3</sup> The authors also included a second condition, the “causal chain” condition, in which participants were told that exercise leads to increases in the neurotransmitter, which then leads to decreased eating. Regardless of choice condition, participants estimated it equally likely that the friend possessed the neurotransmitter.

of the exercise was unspecified, participants had just observed that the friend was both exercising more and eating less. Participants in each condition were asked to estimate the likelihood that the friend possessed the neurotransmitter, given the observed increase in exercise and decrease in eating.

The results demonstrated that people think of choices as interventions, i.e., as exogenous causes of behavior. Participants attributed the exercise to the neurotransmitter only in the observation condition. Interestingly, participants did not differentiate between the choice condition and the intervention condition. When it was clear that the exercise was forced upon the friend, participants thought (rightly, it would seem) that they could infer nothing about the presence of the neurotransmitter. Remarkably, though, participants gave the same response for the choice condition.

Thus, the data suggest that in participants' minds, choices were conceived of in the same way that external interventions were: As causes existing independently of the broader network of cause and effect, which exert a direct effect upon the person's eventual behavior.

Demonstrations by Hagmayer and Sloman (2009) never systematically tested whether the perception of exogeneity extends to others in the same measure as it extends to the self, but for reasons outlined here, it seems likely that self-perceived exogeneity is even greater than that observed in their studies.

The exogenous-endogenous distinction in choice fits nicely with another line of work on conceptions of choice – this one from the cultural literature. Markus and Kitayama (2003) have hypothesized that cultures may differ in their conceptions of agentic behavior along a continuum much like that proposed by Hagmayer and Sloman. Specifically, they posit *disjoint* versus



*conjoint* models of agency. Cultures favoring *disjoint* models of agency situate agentic behavior inside the individual – agentic behavior is that which involves the individual imputing his or her will upon the external world, shaping it to his or her desires, preferences, and beliefs. Cultures favoring *conjoint* models of agency, on the other hand, count responsiveness to the world, other people, social roles, and norms as agentic behavior. Thus, in these cultures one may be seen as an agent not by rejecting or acting out against a prescribed social role or situational influence (as one would in a disjoint context), but by acting in accordance with this broader social structure, cohering one's behavior to a collective pull.

The disjoint/conjoint distinction tends to characterize agency as it is seen in European American and Asian contexts, respectively, although additional work has extended it to broader differences in individualism and collectivism that may arise from factors other than geographical location, such as socio-economic status (Stephens, Fryberg, & Markus, 2011; Stephens, Hamedani, Markus, Bergsieker, & Eloul, 2009).

**Applying these models to self and other.** The hypothesis tested in Chapter 2 is that people construe their own choices and decisions differently than they construe of the same choices and decisions of other people. The dimension upon which this asymmetry is expected to vary is the extent to which choices are viewed as *exogenous* (or *disjoint*) inputs into behavior. I expected that relative to how they view other people's behavior, people will understand their own behavior more as the product of active choice, an independent and considered intervention upon the world that shapes their fate. The role of active, exogenous choice will play a more minor role in people's understanding of the forces giving rise to others' behavior.

Two sets of existing findings lend indirect support to this hypothesis. First, in their

predictions of the future, people seem to give more weight to their own acts of will than to another person's. For example, people think that strong intentions will matter more for determining their own behavior than for determining the behavior of a random peer (Koehler & Poon, 2006; Pronin & Kugler, 2010). They also think that their aspirations are more informative, and past behavior less informative, with regard to what they will achieve than to what a peer will achieve (Helzer & Dunning 2012). Thus, people seem to think that they, more than others, are capable of altering the trajectory of their own behavior, even against extraneous forces that may threaten to constrain them. At the same time, there is evidence that people see themselves as less influenced by a variety of extraneous forces than others are (Balcetis & Dunning, in press; Douglas & Sutton, 2008, 2010; Perloff, 1993, 1999; Pronin et al., 2007). They do not apply their wisdom of how these forces shape others' behavior to their understanding of the self, leaving them unaware of just how endogenous their own choices really are.

*Endogenous for you, exogenous for me: Self/other perceptions of conformity and social influence*

A start-point for understanding when and how people see their own choices and decisions as more exogenous than others' comes from the psychological literature on perceptions of conformity and social influence. Conformity, or adherence to norms, peer influence, or other social forces, is a powerful determinant of social behavior (Asch, 1956; Milgram, 1974; Prentice & Miller, 1996), yet recent research suggests that people are rather blind to recognizing when their own behavior is shaped by conformity pressures – especially in cases where “doing what others do” is seen as an illegitimate course of action.

There is evidence that people see themselves as less susceptible to conformity than the average person (Pronin et al., 2007). In one demonstration, for example, Pronin and colleagues asked iPod users whether their decision to purchase an iPod was driven by social pressure (to fit in or to align their preferences with those of their peers). Participants reported that relative to the average peer, their decision to purchase an iPod was driven less by social pressure. Participants reported this even when led to believe that going with the group carries a host of benefits to the self and others, suggesting that the pressure to see oneself as a non-conformist outweighed any fleeting message that acting conjointly with others was a positive quality.

In another study, Princeton students were asked whether they supported or opposed a series of academic proposals. As they were making their decisions, the experimenters biased participants toward particular issues by providing them with recommendations from a panel of Princeton students. Later on in the study, participants were asked about the extent to which they versus a peer (whose responses were actually the participant's own, thinly veiled) had been influenced by the recommendations of the panel. Although participants' own positions and those of their “peer” showed the same number of conforming responses, participants thought that the other person had been more influenced by the position of the panel than they themselves had.

These demonstrations are consistent with the idea that people register the social-psychological pressures that constrain others' choices, but deny the impact of these same forces on their own choices. Thus, they are consistent with the hypothesis that people see their own decision-making as more exogenous than others'. However, these studies do not allow for an exploration of whether decisions on the part of the self are *actually* more exogenous than the decisions other people make. Are self-perceptions of conformity underestimating actual

conformity? Are peer-perceptions of conformity overestimating conformity? These questions are largely open for empirical investigation.

One line of work that potentially speaks to the question of accuracy is research on the *third-person effect* in communications. The third-person effect focuses upon people's perceptions of the extent to which they relative to other people are susceptible to media influence. In a typical study, people report that others are generally more swayed by media information than they themselves are (Davison, 1983; Perloff, 1993, 1999). Douglas and Sutton (2008), for example, manipulated participants' suspicions surrounding Princess Diana's death and then asked them to rate the plausibility of a number of conspiracy theories related to the manner of her death. After this, participants were asked how they, or how the average person, would have rated the plausibility of the conspiracy theories *prior* to having read the suspicious information about Princess Di's death. The researchers compared participants' estimates of the amount of attitude change they or someone else had experienced/would experience after being exposed to the suspicious information to the actual change prompted by the information (gleaned from a control condition in which participants merely rated the plausibility of each of the conspiracy theories).

Results indicated that participants underestimated the impact that the suspicious information had had on their own ratings of the conspiracy theories. However, participants' ratings of the effect of the suspicious information on others roughly approximated the observed effect of the information. This result – that people were accurate with regard to others' attitude change, but inaccurate with regard to their own – is consistent with the idea that people saw their own post-manipulation attitudes as more exogenous than others' attitudes (see also Douglas &

Sutton, 2010). Notwithstanding, these results are subject to alternative explanations that have little to do with exogeneity (see Chapter 3), and it should be noted that other results from the third-person literature often tell a slightly different story, with people underestimating the effect of information on themselves, but overestimating the effect of information on others (for reviews, see Perloff, 1993, 1999).

In total, the psychology and communications literature suggest that people understand the source of choices and decisions differently for self and other. Returning to Figure 1, people perceive direct influences of social-situational factors upon others' choices and decisions, but may see only indirect connections between these same forces and their own choices. In Chapter 3, I develop a paradigm for testing this idea, which borrows from both the psychology and communications literature. Two studies allow for a test of just how much exogeneity people see in their own decisions, relative to the decisions of another person, and whether the amount of exogeneity seen in the self overstates the extent to which decisions are actually free from extraneous influence.

#### *Sources of asymmetric perceptions of exogeneity*

Another open question is how it is that people arrive at the belief that their own decisions are both freer than those of other people and freer than they actually are. Not surprisingly, both bodies of literature reviewed above offer plausible explanations. I build upon these explanations in Chapter 4 in an attempt to understand how the meta-cognitive features of decision-making paint one's own decisions as more exogenous than those of a peer.

One reason people may report more freedom in their own decisions than those of a peer is

that conformity to an external pressure is viewed negatively, and people are motivated to think well of themselves (Perloff, 1989, 1993, 1999). On this theorizing, most commonly offered in the third-person effect literature, people should perceive less conformity in the self than others when issues are important (and thus, self-relevant) and should demonstrate the effect simply as a by-product of the desire to enhance positive feelings about the self. Very little empirical work has been put forth in support of these ideas, although it seems likely that, particularly within cultural contexts where disjoint models of agency are emphasized, the pressure to see oneself more than others as a cultural exemplar will drive asymmetric perceptions of susceptibility to social influence. This explanation, however, proves somewhat unsatisfying in that it makes no specific claims about *how* exactly such asymmetric beliefs are supported.

Another possibility, proposed by Pronin and colleagues (Pronin, 2009; Pronin & Kugler, 2007, 2010; Pronin et al., 2007), offers a social-cognitive route by which these beliefs might be maintained. This proposal states that people privilege different information when assessing bias and conformity in themselves and others. Specifically, people look to outward behavior to understand when others are influenced by social-situational factors, but rely upon introspective information when assessing bias in themselves. Across a number of studies (most notably, Pronin & Kugler, 2007 and Pronin et al., 2007), participants reported using different information when engaged in these evaluations of self and other.

In one study, for example (Pronin et al., 2007), participants perceived less political party influence in their own conforming attitudes than those of a peer. They further indicated that they looked to their thoughts and introspections for evidence of their own conformity (and finding none, concluded that they had not conformed), but relied less upon this information when

assessing conformity in others. The lack of reliance on others' introspections was not driven by availability of this information – even when provided with a transcript of the information that had passed through their peer's head as he or she was forming a final attitude, participants discounted the information as diagnostic of conformity.

Another possibility, tested in Chapter 4, falls out of the model illustrated in Figure 1. This hypothesis begins with the proposal that, in at least some cases, people will assess exogeneity by “trying on” their own or another person's thoughts at the time of the decision. In other words, people will simulate what they, or another person, would be thinking as they arrive at a decision. If the phenomenology of these simulations is different for self and other, it seems likely that this experience will yield very different perceptions of exogeneity. In particular, people may experience others as starting from a more biased decision point than they themselves do, and as progressing more quickly through their decision than does the self. Compared with simulations of the self's decision making, simulations of others will provide minimal evidence of deliberation or exogenous intervention, and so, people will see others' decision as more foregone conclusions than their own, beginning from the point where an extraneous bias was introduced.

There is some anecdotal evidence that people overestimate just how much of a causal role extended deliberation plays in their own choices. Although never formally tested, Griffin and Tversky (1992) asked job candidates to rank order the job positions they were considering from most desirable to least desirable, and then asked the candidates to assess the likelihood that they would, in the end, choose the most desirable job. Although people overwhelmingly chose the job that topped their list, they only saw themselves as 65% likely to do so at the time they were queried by the authors. Thus, they were unaware of just how made up their minds really were.

This phenomenology (the sense that one's decision is far from made and that one's mind could be shifted at any point), I argue, is ever-present in people's own decision-making, but considerably less prominent when people “try on” others' decisions. Chapter 4 explores the way in which this asymmetric experience of *indecision* contributes to the sense that one's final decision was freer from influence than was the decision of a peer.

### *Overview of the guiding questions*

In its particulars, then, the research reported herein attempts to provide answers to four questions:

(1) Do people conceive of their decisions, relative to those made by others, more as acts of exogenous agency? That is, do they see themselves as engaging in more active choice than others do when arriving at decisions?

(2) When compared to reality, do people overestimate just how exogenous their decisions are? Are they more accurate in estimating the impact of extraneous influences on their peers' decisions than on their own?

(3) How do people simulate the decisions that others make? In what way is simulating another person's decision-making phenomenologically (i.e., meta-cognitively) distinct from simulating one's own decision-making or making an actual decision?

And, finally, (4) might people see their decisions as more exogenous than other people's because of fundamental differences in the way people simulate their own and other people's decisions?



## Chapter 2

### The self as an exogenous agent:

#### The role of choice in everyday behaviors performed by self and other

The goal of the first two studies was to document self/other differences in the perception of exogenous agency. To say that people see more exogenous agency in their own decisions than another person's decisions is to say that people see themselves more than others as active authors of their own lives. This means that instances of behavior that may appear, from an outside perspective, to be minimally agentic either because they seem to require very little active choice or because they appear to conform to some kind of endogenous (social-situational) influence, would, from the perspective of the agent, still seem like an act of exogenous agency.

In Study 1, people were asked to compare the amount of active choice that goes into their daily decisions to the amount of active choice that their peers put into the same decisions. I hypothesized that, on average, people would see themselves relative to others as more active choosers in their day-to-day lives.

The second study built off of existing work in the conformity literature (Pronin et al., 2007), by asking participants to consider a range of conformity behaviors from either their own perspective or from the perspective of a randomly-selected peer. I expected these instances of conformity to be construed differently for self and other, such that conformity on the part of the self would nonetheless be construed as an exogenous act of choice (*I chose to conform*), whereas conformity on the part of another person would be construed endogenously (*He just went along*).

Together, these two studies provide a basis for understanding a fundamental dimension (exogenous agency) upon which self and other are viewed distinctly.

### **Study 1: Active choice for self and other**

How do people see the decisions they and others make on a day-to-day basis? Note that many daily decisions – what clothes to wear, what cereal to eat for breakfast – can occur relatively seamlessly and often require minimal deliberation or active choice. Notwithstanding, even these often effortless decision chores may be occasionally tinged with a person's agentic signature. A small deliberation here, a consideration of alternatives there, might serve to imbue these otherwise casual decisions with the feeling that one has engaged in active choice about the direction of his or her life. Study 1 explored whether routine decisions such as these would nonetheless be conceived of as acts of exogenous agency more for self than for others.

In this study, I used the concept of active versus passive choice as a metric of perceived exogeneity. In talking about *active choice*, I am borrowing from the cultural literature on disjoint versus conjoint models of agency (a distinction I have argued is more or less isomorphic with the way I am using the concepts of exogenous and endogenous agency). As it turns out, the relationship between agency and choice is very different depending upon whether one comes from a culture that employs a disjoint or conjoint model of agency. Savani and colleagues (Savani, Markus, Naidu, Kumar, & Berlia, 2010) have shown that people from cultures that feature disjoint models of agency (such as the U.S.) place more emphasis on decision-maker's choices, and see agency itself as the capacity to actively shape one's life vis-a-vis independent, or free, choices. Individuals from cultures employing conjoint models of agency (such as India), in

contrast, de-emphasize the concept of choice in their models of agency and action; focusing instead on the situational forces or social roles that drive a person's decisions and behavior.

I sought to import these findings from the cultural literature into an exploration of exogenous agency for self and other in Study 1. To do so, I asked participants to make explicit comparisons between their own daily decisions and those of the average peer (another Cornell student) with respect to the amount of active choice involved in arriving at their decision. I anticipated, in accordance with the hypothesis that people see their own decisions as more exogenous than the average person's, that participants would ascribe more active choice to their everyday decisions than to their peers' decisions.

### *Method*

#### *Participants*

Fifty-five Cornell undergraduates completed this questionnaire at the end of an unrelated lab session. For their participation, participants received either course credit or \$5.

#### *Materials and Procedures*

Participants were informed that they would be considering a series of everyday behaviors and decisions, and rating them in terms of the amount of choice that goes into each. They read the following description, which explained the concept of active vs. passive choice:

Decisions arise from choices that fall on a continuum from *active* (those that involve effort and conscious deliberation) to *passive* (those that occur somewhat seamlessly, without much thought). When we give attention and consideration to a decision, that is an *active choice*; when we make decisions without much effort, habitually, or simply because we're going along with other people or a norm, that is a *passive choice*.

Participants were then asked to consider 14 behaviors (see Table 1). For each behavior they were asked to think back to how they had gone about making the decision yesterday. They then answered the following question: “Relative to the average Cornell student (not you) was the choice you made more passive or more active?” They offered each response on a scale from -2 (*Much more passive than the average Cornell student*) to 2 (*Much more active than the average Cornell student*). The midpoint of the scale was labeled *Just as active/passive as the average Cornell student*, and the -1 and 1 points were labeled as *Somewhat more [passive/active] as the average Cornell student*, respectively.

### *Results and Discussion*

Mean responding is presented in Table 1. Values higher than zero indicate that participants saw their decision, relative to that of the average student, as a product of more active choice. On 11 out of 14 scenarios, the mean choice rating was positive, suggesting that participants saw their daily routine as governed by more active choice than the daily routine of their average peer. I created a composite score by averaging participants' responses across all 14 items; this overall mean ( $M = .14$ ,  $SD = .35$ ) was significantly greater than zero,  $t(54) = 2.89$ ,  $p = .005$ . Thus, participants saw more exogeneity in their own daily decisions than the decisions of their peers.

**Table 1:** Participants' mean ratings (and standard deviations) of the amount of passive versus active choice involved in 14 daily decisions, Study 1. Numbers higher than zero indicate that participants saw their decision as the product of more active choice, relative to the decision of another Cornell student.

<i>Behavior</i>	<i>Mean choice rating (SD)</i>
What time to get out of bed in the morning	.16 (1.16)
What to have for breakfast	.05 (1.12)
What clothes to wear	.11 (1.16)
Whether to attend class or skip	.25 (1.18)
When to work on homework and for how long	.28 (1.10)
What to have for lunch	.25 (.97)
Whether to watch TV/What to watch on TV	-.13 (1.22)
When to check email	.03 (1.15)
Whether/when to go on Facebook	-.23 (1.04)
What to have for dinner	.35 (1.09)
Whether to stay in at night or go out	.16 (1.10)
When to go to bed	.28 (1.11)
Whether to shower before bed	-.07 (1.03)
Whether to set an alarm for the next morning (and what time to set it for)	.40 (1.18)

Study 1 paints a picture of the self as an exogenous agent whose decisions seemingly emerge from more active consideration than those of the average person. Nonetheless, there are several limitations. First, because the design asked participants to reflect upon the decisions they made yesterday (which were, of course, idiosyncratic to the participants themselves), there is no telling whether the decisions participants made actually were the products of more active choice than the same decisions made by peers. Second, because the responses participants gave were comparative in nature (i.e., “relative to the average Cornell student”), it is not clear whether

those responses reflect, in an absolute sense, greater perceived exogeneity in the self or greater perceived endogeneity in other people.

Both of these limitations were addressed in Study 2 and throughout the remainder of the paper. In Study 2, I asked participants to consider hypothetical events, which allowed me to control for the behaviors that participants were considering. Participants also rated either their own behavior or that of a peer, which allowed me to disentangle beliefs about exogeneity for the self from beliefs about endogeneity of other people.

### **Study 2: Exogenous construal of conformity behavior for self and other**

Study 2 explored exogeneity in a more indirect way than Study 1, by assessing the extent to which people construe their own or their peers' acts of conformity in exogenous terms. This study was modeled off of the conformity findings of Pronin and colleagues (Pronin et al., 2007). In these studies, the researchers asked participants to consider an instance of conformity from their own lives (such as purchasing a “fad” product or aligning one's private views with those of a group) and to assess the degree to which their own or another person's behavior in this situation was the product of social influence. Across studies, participants reported that their own decisions were less influenced by these pressures than others' were. What remains ambiguous in these studies, however, is how exactly participants registered these acts of conformity for self and other. Although participants said that others were more influenced than they were, this could reflect anything from a belief in the total absence social influence for the self to a belief in the blind obedience of other people.

Study 2 helps to clarify this issue in two ways. First, the guiding hypothesis of Study 2

was that the very same act of conformity would be construed as different behavior, depending on whether it was viewed from the perspective of self or other. Conformity on the part of the self would be construed as an exogenous act – one in which the person *decides* to align their behavior with a particular external pressure. Conformity on the part of another person, though, would be construed as an endogenous act, one in which extraneous forces shape behavior with minimal reference to the agent's choice. In addition, participants in Study 2 rated either their own or another person's conformity in a manner that did not confound beliefs about self and other with beliefs about people in general, allowing the results to speak to more than just comparative estimates of a single instance of conformity against a more general tendency toward conformity in the population.

Participants in Study 2 considered a series of scenarios (for a copy of the materials, see the Appendix) in which their own or another person's behavior conformed to an extraneous influence (such as a norm, a trend, or another person's suggestion). For each scenario, participants picked which of two descriptions better captured the behavior. One description used an endogenous construal of the behavior (one that emphasized the agent's blind adherence to the extraneous force); the other description provided an exogenous construal of the behavior (typically a decision to conform one's behavior to the extraneous influence).

The exogenous construals were written in such a way that there was always some indication that the agent him- or herself had played an active role in bringing about the behavior. For example, one scenario (“Voting decision”) was a case in which the protagonist felt he or she did not have enough information about a local election and, so, sought the advice of the neighbors, and eventually voted with the neighbors' suggestion. The endogenous construal (*My*

*neighbors told me who to vote for*) lacks reference to any intervening choice on the part of the agent, emphasizing the direct effect of the extraneous influence on the agent's behavior. The exogenous construal (*I listened to their advice*), by comparison, connotes that, at some stage, the agent consented to being influenced by the neighbor's opinion. Thus, the exogenous construal situates the cause of the voting decision not in the neighbor (or the advice), but in the agent's decision to follow the neighbor's advice.

I predicted that people would on average see their own behaviors as possessing more of an exogenous signature – that is, they would pick more exogenous construal of their own conforming behavior than the conforming behavior of a peer.

### *Method*

#### *Participants*

Eighty-six participants (assigned randomly to either the self or peer condition) were recruited through Amazon's Mechanical Turk. They completed this scenario and one unrelated survey in exchange for \$0.20.

#### *Materials and Procedures*

Participants were told that they were taking part in a study about how people describe behavior. They read that any behavior can be construed in a variety of ways. For example, *shoveling the sidewalk outside your house after it snows* could be described as "helping out my neighborhood," "keeping the sidewalk safe," or in some places, "avoiding a fine." Participants were informed that none of these descriptions is any more accurate than the others, but that they represent different ways of seeing the same action.



Participants then read each of the 10 instances of conformity in randomized order. In each, the protagonist was either the participant (self condition) or an average person, to whom I gave the name “Mike” (other condition), varied entirely between-subjects. After reading the scenario, participants were given two possible ways of construing the behavior (one exogenous, one endogenous) and were asked to indicate which of the two options was the better descriptor for the behavior. Participants indicated how well each description “fit” the behavior using a continuous scale, with options *Definitely #1*, *Somewhat #1*, *Somewhat #2*, and *Definitely #2*.

### *Results*

Before analyzing data, I reverse scored 4 of the 10 responses, so that higher numbers on each scenario indicated greater preference for the exogenous construal. These converted means and standard deviations are presented in Table 2. On nine of the 10 scenarios, ratings of participants in the self condition were higher than ratings for participants in the other condition. Summing across all ten scenarios, the total for those in the self condition ( $M = 26.39$ ,  $SD = 4.92$ ) was significantly higher than the total for those in the other condition ( $M = 23.65$ ,  $SD = 3.22$ ),  $t(82) = 3.00$ ,  $p = .004$ , and this overall pattern suggested that people preferred more exogenous construal of their own conformity than others' conformity.

In a secondary analysis, I recoded participants' data into a dichotomous responses, according to whether they construed each of the ten instances of conformity exogenously (coded 1) or endogenously (coded 0). Totaling these values revealed that, on average, participants picked more exogenous construals for their own behavior ( $M = 5.37$ ,  $SD = 2.09$ ) than for another person's behavior ( $M = 4.47$ ,  $SD = 1.61$ ),  $t(82) = 2.21$ ,  $p = .03$ . It is interesting to note that both ways of cleaving the data situate self and other on opposite sides of the (hypothetical) midpoint

response. On average, participants' construal for others fell on the endogenous end of the response scale; while their construal for the self fell on the exogenous end of the scale.

It is also notable that in at least three of these scenarios (*whistle-blowing*, *stingy tipping*, and *jaywalking*) the conforming behavior was mildly negative. If participants were being self-serving in their attributions, they would say that when *they* failed to speak out against someone who was cutting in line, or when *they* chose to short change a server in a restaurant, these behaviors were attributable to forces of the situation or peer pressure, not to exogenous decisions that *they* had made. However, responses for these scenarios look identical to responses on the other items, suggesting that participants tended to see exogeneity everywhere when looking at their own behavior, relative to others'.

**Table 2:** Participants' ratings for endogenous versus exogenous construal of conformity behavior, Study 2. Higher numbers represent a preference for more exogenous construal of conformity.

<i>Scenario</i>	<i>Mean (SD) for other rating</i>	<i>Mean (SD) for self rating</i>	<i>Self-rating minus other- rating</i>
Television program	2.12 (.96)	2.60 (.99)	.48
Voting decision	2.16 (1.07)	2.83 (.96)	.67
Camera purchase	2.42 (1.00)	2.45 (.99)	.03
Whistle-blowing	2.72 (.85)	3.26 (.94)	.54
“Green” practice	3.07 (.86)	3.17 (.92)	.10
Money donation	1.88 (.91)	2.44 (.98)	.56
Stingy tipping	1.86 (.86)	2.12 (1.14)	.26
Going out	2.53 (1.05)	2.66 (.99)	.13
Jaywalking	1.98 (1.08)	2.56 (1.10)	.58
Entree selection	2.91 (1.04)	2.24 (.93)	-.33

### *Discussion*

The results from Studies 1 and 2 suggest that people see the workings of exogenous agency more when looking at their own lives than the lives of their peers. A student sample in Study 1 indicated that, on average, more active choice was involved in the decisions they make throughout their day than in the decisions their peers make. An internet sample in Study 2 indicated that conformity on the part of the self meant something different than conformity on the part of another person. In particular, those in Study 2 construed conformity on the part of the self more in terms of their decision to align behavior with an extraneous pressure, and conformity on the part of others as evidence of a direct social-situational influence on behavior.

**Choices as mediators between environmental inputs and behavioral outputs.** One way of conceiving of exogenous agency, captured by the data from Studies 1 and 2, relies upon the statistical concept of mediation. In mediation, the effect of an input variable on an output variable is carried through some proximate third variable. In the case of exogenous agency, that third variable is choice.

According to the results of Study 1, the role of active choice on decisions and behavior is emphasized when people think of their own decisions, relative to decisions made by others. As a result, people see a more direct effect of social-psychological influences upon others' behavior than their own. The results of Study 2 show this most clearly, with participants choosing, for themselves, construals of conformity that highlight the mediating role of choice in the decision to conform one's behavior to an external norm.

Because choice is very much at the forefront of people's minds when thinking about their

own decisions, they are likely to “miss” the direct or indirect effects of social-psychological variables upon their own decisions. These variables will be eclipsed by the overwhelming role that choice plays in people's understanding of their own decisions, and in looking back, choice, as a proximal link between the external world and the person's ultimate decision, will loom large as the key determinant of the person's own decision. On the other hand, because choice is de-emphasized in people's understanding of others' decisions, the direct effects of extraneous variables should be more front-and-center and better understood in people's models of their peers.

On the basis of this reasoning, Chapter 3 (and, later, Chapter 4) sought to test the accuracy of people's understanding of how influenced they are, and how influenced their peers are, by extraneous influences. Does the exogenous model of agency that people apply to their own decision-making accurately reflect the constraints that extraneous forces place on decisions and behavior, or does it underestimate just how influenced people actually are by external forces? Do people show greater wisdom about the effect of these same forces on their peers' thinking? These questions formed the bases for Studies 3A and 3B.

## Chapter 3

### Perceptions of exogeneity for self and other: Is the self *really* more exogenous?

The studies in Chapter 3 (along with those in Chapter 4) explore self/other differences in presumed exogeneity by asking people to anticipate the effect of extraneous influences on decisions made by the self or another person. I expected that people would see their own decisions as more impervious to extraneous influence than others' decisions. Advancing beyond this directional effect, however, I took the additional step of testing the accuracy of these beliefs. In particular, I compared participants' estimates of their own or another person's decision exogeneity to the actual effects of an extraneous influence on decision-making. This comparison allowed for a better understanding of whether self/other differences in presumed exogeneity reflect an underestimation of the self's susceptibility to influence, an overestimation of others' susceptibility, or both.

In terms of accuracy, past work suggests a clear prediction with regard to people's beliefs about their own susceptibility to influence, but competing hypotheses with regard to their beliefs about others. People seem not to register the extent to which their thoughts and behaviors are affected by a variety of factors (Balcetis & Dunning, in press; Pronin & Kugler, 2007), which suggests that estimates of one's own decision exogeneity should be similarly flawed. People should systematically overestimate the extent to which their own decisions are free from extraneous influence.

With regard to the perceived exogeneity of others, though, the prediction is less clear. Some research (Balcetis & Dunning, in press; Douglas & Sutton, 2008, 2010; Epley & Dunning,

2000) suggests that people should be fairly accurate with regard to the impact of various extraneous forces on their peers' behaviors and decisions. Other research (Gunther, 1991; Perloff, 1989), however, suggests that people may overestimate the extent to which others' decisions and views are pushed around by extraneous forces.

Research findings from the third-person effect literature offer the most relevant tests of accuracy with regard to self/other differences in susceptibility to influence. In one series of studies, for example, Douglas and Sutton (2010) assessed participants' views on a particular issue (e.g., gun control or fossil fuel use) as a baseline (Time 1) measure of their attitudes. A week later, participants returned to the lab and were provided arguments that supported one side of the relevant issue. After reading the persuasive arguments, participants once again reported their (Time 2) attitudes on the issue. From this, researchers could calculate the actual effect of the message on participants' attitudes. Then, participants made three additional estimates. First, they were asked to recall what their attitudes were a week prior – before they had read the persuasive message. Next, they were asked to estimate the effect of the persuasive message on another person by estimating the pre- and post- message attitudes of the average person.

It turned out that people's estimates of their own attitude change from Time 1 to Time 2 were significantly more modest than both the amount of change prompted by the persuasive message (i.e., the actual change in their attitudes) and the amount of change they predicted would occur in their peers. Notwithstanding, participants' estimates of their peers' attitude change roughly approximated the actual shift in attitudes from Time 1 to Time 2. Thus, Douglas and Sutton (2010) argued that people underestimate their own susceptibility to influence, while maintaining accuracy with regard to the effect of a persuasive message on others. It should be

noted that other, similar lines of research have provided more of a mixed-bag of results with regard to self/other accuracy and the third-person effect (for a review, see Perloff, 1999).

While the Douglas and Sutton results potentially speak to the question of accuracy in people's beliefs about their own and other people's decision exogeneity, they leave open an alternative explanation, and one that has nothing to do with presumed exogeneity. The alternative explanation, drawing from Self-Perception Theory is that participants are unable to recall their attitudes at Time 1, and therefore use their current attitudes to reconstruct attitudes of the past (Bem, 1967; Bem & McConnell, 1970). Indeed, the methods employed in the third-person effect literature as well as the results obtained bear striking resemblance to those from Bem and McConnell's classic (1970) studies. However, Bem and McConnell were not arguing that participants denied change in their own attitudes, but rather that they could not perceive change because there never was a stable Time 1 attitude to begin with.

From this perspective, the resemblance between attitudes at Time 1 and Time 2 in third-person effect studies may not reflect a belief that one's own attitudes are impervious to influence (the exogeneity hypothesis); it could instead be symptomatic of the reconstructive nature of memory, and participants' inability to undo current knowledge when attempting to recall attitudes of the past. Given that the typical third-person effect manipulation shifts participants' attitudes by less than 10% of the initially-reported attitude (see, for example, Douglas & Sutton, 2008; 2010), it seems entirely plausible that participants are simply unable to recall where they started from prior to reading the persuasive message, and therefore use current attitudes as a guide.

It should be noted that this alternative account is not at all damning for the overall message of the third-person effect literature. Regardless of the mechanism, it is still the case that

participants remain largely unaware of media influences upon their own attitudes, and intuit with some degree of precision the effect of these messages on others. However, the exogeneity hypothesis advanced in this paper is more specific with regard to perceptions of influence for self and other. It is not merely that people fail to register changes in their attitudes and beliefs, but that they deny that extraneous influences have as much of an effect on their own decisions as they do on others'.

### **Studies 3A and 3B: Differential accuracy of self/other exogeneity**

With this in mind, Studies 3A and 3B borrowed from both the conformity and the third-person effect literature to assess whether, as an index of presumed exogeneity, people deny extraneous influences on their own decisions while remaining aware of the influence of these same forces on others. In both studies, I first presented one group of participants (*decision-makers*) with a controversial social issue, told them about the attitudes of their peers, and then asked them to form their own attitude about what should be done. This allowed for an estimate of exactly how much impact the attitudes of a person's peers had on the person's own decisions and attitudes. I then asked another group of participants (*forecasters*) to estimate the impact that peers' attitudes would have on their own or another person's attitudes on the same issues.

By using the same dependent measures for both halves of the studies, I could compare perceived exogeneity of decisions for self and other (gleaned from forecasters) to the actual exogeneity of the decision-makers' decisions. By employing separate groups of participants, I could ensure that forecasters' responses reflected the anticipated effect of the extraneous influence (in this case, peer influence) for self and other, avoiding alternative explanations stemming from flaws associated with retrospective reports of past attitudes.



## *Method*

### *Participants*

Both studies 3A and 3B employed one group of decision-makers and one group of forecasters. Decision-makers were subjected to the attitudes of their peers before being prompted to make their own decision about a controversial issue. Forecasters simulated the decision that they or another person would make after being exposed to the same information about the attitudes of their peers and then simulated the decision as if they had been exposed to different information about their peers' attitudes.

In Study 3A Cornell undergraduates participated in exchange for course credit (the survey was administered at the end of an unrelated experimental session). Study 3B used a sample recruited from Amazon's Mechanical Turk; participants were compensated \$0.05 for their time. Participants in both studies were randomly assigned to be decision-makers or forecasters. Across the two studies, 98 people served as decision-makers and 80 people served as forecasters.

### *Materials and Procedures*

**Decision-makers.** Decision-makers in Study 3A read that there was widespread controversy regarding Facebook's current privacy settings. Participants were randomly assigned to learn that a majority of their peers approved or disapproved of current privacy settings. Half were told that in a recent survey 30% of Cornell students expressed dissatisfaction with the current degree of privacy granted to them by Facebook; the other half were told that 70% of their peers were dissatisfied.

Decision-makers in Study 3B read about a (true) recent controversy regarding the use of

the n-word in *Huck Finn*. They read that publishers had recently started producing edited versions of *Finn* that omitted or replaced all reference to the taboo word, much to the dissatisfaction of educators.<sup>4</sup> They were further told about a recent educational proposal, which would retain the unedited version of *Finn* in the school curriculum, but change the age at which students would read the original version (delaying it from 6<sup>th</sup> to 8<sup>th</sup> grade). This later exposure to *Finn* would ostensibly allow for more mature discussions of the historical and sociological implications of the text. Decision-makers were told that in a recent poll of Americans 82% approved or disapproved (manipulated between-subjects) of this proposal.

In both Studies 3A and 3B, decision-makers offered their own opinion about the issue after reading the above descriptions. They indicated their approval of Facebook's privacy settings (Study 3A) or their approval of the educational proposal (Study 3B) using Likert scales, with higher numbers signifying greater approval. In Study 3A, approval was measured on a 1-7 Likert scale; in Study 2B, a 1-5 Likert scale.

**Forecasters.** Forecasters were randomly assigned to simulate making a decision either from their own perspective or from the perspective of a randomly selected peer from the Cornell (Study 3A) or M-Turk subject pool (Study 3B). They were introduced to either the Facebook or *Huck Finn* controversy, and were asked to imagine that they [their peer] had been told that a majority of respondents had indicated approval or disapproval toward the issue at hand. I used the exact proportions and exact wording for forecasters as I did for decision-makers. They then were asked to anticipate the extent to which they [their peer] would indicate approval of the issue.

---

<sup>4</sup> In this, educators' views matched those of participants. Across decision-makers and forecasters in Study 2B, the mean approval rating for the decision to publish the censored version of *Huck Finn* was 1.85, on a scale anchored from 1 (*Strongly disapprove*) to 7 (*Strongly approve*)

After they made their ratings, forecasters were asked to imagine that they [the same peer] had been in the opposite condition – in other words, if forecasters had just imagined that they [their peer] had been in the majority approves condition, they were now asked to imagine that, in fact, they had been in the majority disapproves condition. They were asked to indicate what their [their peer's] response would have been had they [their peer] instead been given this alternative information, using the same scale. The order of information was counterbalanced so that half of the participants first imagined majority approval and half first imagined majority disapproval.

### *Results*

Results are summarized in Table 3. I first examined the impact that the majority had on decision-makers' own attitudes. In both Study 3A and Study 3B, decision-makers' attitudes toward the two controversial issues were significantly swayed toward the majority opinion. In Study 3A, decision-makers approved more of Facebook's current privacy settings when the majority of their peers approved than when the majority of their peers disapproved,  $t(38) = 2.32$ ,  $p < .05$ . In Study 3B, decision-makers approved more of the educational proposal when the majority of Americans approved than when the majority disapproved,  $t(56) = 2.98$ ,  $p < .01$ . Thus, whether or not they acknowledged it, decision-makers were influenced by majority opinion when arriving at their own decision.

To what extent did forecasters have prospective awareness of the effects of the majority on their own or another person's attitudes? Recall that forecasters offered two ratings. They began by estimating the degree to which they [their peer] would express approval of the issue, given information about the majority of respondents (either that the majority approved or disapproved of the issue). They then were asked to imagine that they [the same peer] had

*instead* been given the opposite information about the attitudes of the majority of respondents, and estimated the response that they [their peer] would have given had they been led to believe this opposing information. By subtracting forecasters' second approval rating from the first, and taking the absolute value of this difference score, I estimated the effect that forecasters thought majority opinion would have on their own or their peers' decision-making.<sup>5</sup>

In both Studies 3A and 3B, forecasters estimated that majority opinion would have a larger effect on shaping the attitudes of peers than the attitudes of the self,  $t(42) = 5.75, p < .0001$  and  $t(30) = 3.83, p < .01$ , for Studies 3A and 3B, respectively. To explore the accuracy of these estimates, I collapsed across the results of both studies. A look at Table 3 suggests that although forecasters estimated that peers' decisions would be more influenced by the majority than the self's decisions, the estimates they gave for self and peer seemed to fall on either side of the observed amount of influence evident in decision-makers' responses. Indeed, when meta-analyzing across studies, forecasters significantly *underestimated* the effect of the majority upon their own decisions,  $Z = -9.80, p < .0001$ , but significantly *overestimated* the effect of the majority upon their peers' decisions,  $Z = 3.56, p < .001$ . Thus, forecasters assumed too much exogeneity for themselves and too little exogeneity for other people. Note, however, that on average, people's estimates of others' exogeneity were off the mark by a lesser degree than were estimates for the self. A comparison of the above  $Z$ -scores suggests that people's *underestimation* their own susceptibility to influence was almost three times greater than their *overestimation* of others' susceptibility to influence.

---

<sup>5</sup> In Study 3A, six forecasters estimated a “contrarian effect” of the information, saying that if they [their peer] had been told that the majority of Cornell students were satisfied, as opposed to dissatisfied, with Facebook's privacy settings, their own [their peers] estimates would have shifted toward greater dissatisfaction. In these analyses, I have excluded these participants because it is unclear what such a response means with regard to the hypothesis under investigation.

**Table 3:** Actual and forecasted effects of majority opinion on the decisions of self and other, Studies 3A and 3B.

	<i>Actual effect of majority opinion on decision-makers' attitudes</i>			<i>Forecasted effect of majority opinion on attitudes of self and other</i>	
	<u>Majority approves</u>	<u>Majority disapproves</u>	<u>Effect of majority opinion</u>	<u>Self</u>	<u>Other</u>
Study 3A (Facebook privacy)	4.65 (1.57)	3.55 (1.43)	1.10*	.42 (.65)	1.80 (.89)
Study 3B ( <i>Huck Finn</i> proposal)	4.25 (.84)	3.43 (1.22)	.82**	.12 (.34)	1.25 (1.13)

### *Discussion*

The results from Studies 3A and 3B confirm that people see themselves as less susceptible to social influence than others. Relative to others, people see their own decisions as arising independently of extraneous influences. People anticipated that the average person would shift his or her stance on a controversial issue, in accordance with the views of a majority. By comparison, people believed their own stance would be more invariant to these shifts in social context.

Responses elicited from forecasters in these studies provide an unclouded view of the extent to which decisions on the part of self and other are seen as exogenous. By asking forecasters to consider their own responses or the responses of their peers in one social context (majority approval) and then to consider what those responses would be in the alternative social context (minority approval), I obtained a measure of susceptibility to extraneous influence that is

unconfounded with time, memory, or effects due to having made an actual decision on the issue. The results were telling: In Study 3A, forecasters anticipated that the effect of social influence would be four times stronger for other people than for themselves; and in Study 3B, the perceived influence was ten times greater for others than for the self.

When I compared these estimates with the actual effect of majority opinion on decision-makers, the results were similarly straightforward. Forecasters predicted that their own decisions would be more exogenous, and that others' decisions would be less exogenous, than they actually were. These results replicate in a single study findings from other research programs showing either overestimation of peers' susceptibility to influence (Gunther, 1991; Perloff, 1989) or underestimation of one's own susceptibility to influence (Cohen, Mutz, Price, & Gunther, 1988), but diverge from the findings reviewed above provided by Douglas and Sutton (2008, 2010). I will return to this divergence in the General Discussion, after reporting the results of Study 5.

### *Interim summary*

Studies 1, 2, 3A, and 3B provide a rich picture of self/other differences in perceived decision exogeneity. Relative to their peers, people see themselves as engaging in more active choice throughout their day; they also construe their outward acts of conformity, relative to those of their peers, as behavioral choices rather than mindless obedience. Studies 3A and 3B further fleshes out this self/other asymmetry in perceived exogeneity. People see their own decisions as relatively more invariant to features of their social context than are the decisions of other people – and they considerably underestimate just how influenced they are by social pressures.

The question that remains is, why do people perceive their decisions as more exogenous

than their peers' decisions, and, indeed, as more exogenous than they actually are? Chapter 4 explores this issue.

## Chapter 4

Moving to mechanism: What gives rise to the sense that decisions are exogenous?

What gives rise to the illusion that one's own decisions are more exogenous than others'? There are likely many factors that contribute. Pronin and colleagues (Pronin, 2008; Pronin et al., 2007; Pronin & Kugler, 2007, 2010) have argued that self/other differences in perception of bias, conformity, and free will can be traced back to differential emphasis upon introspective versus behavioral information for self and other, respectively. On this account, people examine their own introspections when determining whether they are biased, have conformed, or possess free will. In assessing others on these same dimensions, however, people rely less upon introspective information (even when a transcript of another person's thoughts is provided to them) and instead look to others' behavior for evidence. Thus, the very same behavior may be seen as unbiased or biased for self and other, respectively, because people use different information for their assessments. Although bias may be apparent in a person's behavior, the person herself will not register it as biased unless the contents of her introspections suggest biased thinking.

In Chapter 4, I take a different approach to understanding self/other differences in perceived exogeneity. Contrary to Pronin, I hypothesize that people can go beyond observable behavior when attempting to understand others' exogeneity. In particular, when assessing whether they or someone else was influenced, people may “try on” the decision-making that they or another person engaged in when arriving at their conclusion. I propose that simulations of decision-making for the self versus another person “feel” different – that is, the meta-cognitive components of these simulations are distinct – and that this difference in meta-cognitive



experience leads to differing conclusions about the extent to which self and other are engaged in free, or exogenous, choice.

I focus primarily upon the meta-cognitive experience of indecision, or perceived distance from a final decision. Griffin and Tversky (1992) reported the results of an informal polling of their peers that illustrates this phenomenon. They approached 24 colleagues who were considering a variety of job prospects and asked them for the likelihood that they would select each job that they were considering. On average, people reported that they were 65% likely to choose the top job on their list. In actuality, the decision-makers chose that job 96% of the time. Thus, although people's job choices were somewhat “fated” (with a certainty of 96%), decision-makers perceived themselves as farther away from a decision than they actually were – in their minds, there was still a good chance (35%) that they might go with another option.

This underestimation of decision progress may give rise to the feeling that one's decisions were made exogenously. People may underestimate the effect of extraneous influences on their own decisions because, even when such an influence is present, they fail to recognize how much those extraneous factors have entrenched their decision. Thus, it may feel as though the decision could still go either way. On the other hand, people may estimate a stronger effect of extraneous influences on their peers, seeing initial biases in decision-making as having sealed the fate of another person's decision. The next two studies sought to test (a) whether people, in fact, perceive their own decision progress as slower than the progress of a known peer (Study 4) and (b) whether self/other differences in decision progress serve as an explanation for the sense that one's own decisions are more exogenous than the decisions of one's peers (Study 5).

#### **Study 4: Perceived decision progress in self and other**

When people make decisions, they often experience periods of indecision, where it seems as if the decision could go either way. Indecision may be experienced in at least two ways. The first is that people may feel their decisions start at an even-keeled point, where any possible course of action is likely (and/or each possible course of action is equally likely). The second is that people may feel that their decision-making is progressing slowly, resulting in the sense that one is farther away from a decision than one may be in actuality. To the extent that people experience more of either of these markers of indecision for their own decisions than the decisions of other people, it may lead them to experience their own decisions as more exogenous than others'.

In Study 4, participants were exposed to a hypothetical decision, which they made from their own perspective or from the perspective of a close friend. They were shown five potential dating partners and were asked to choose the partner with whom they [their friend] would most want to go on a date. As they made their decisions, they provided information about what their own or their friend's decision progress would be.

I hypothesized that people would see their own decisions as starting from a more even-keeled point, a point at which the person could possibly choose any of the five partners. In simulating their friend's decision, however, I hypothesized that people would start out more biased – seeing their friends as having a clearer preference from the very beginning of the decision-making process, making others' decisions seem “fated.” Furthermore, people were expected to see their own decisions as progressing more slowly than the decisions of their friend – that is, at each stage of the decision-making process I expected people to perceive others as

closer to their eventual decision than they, themselves, were.

### *Method*

#### *Participants*

Sixty-one participants were recruited from Amazon's Mechanical Turk in exchange for \$0.40.

#### *Materials and Procedures*

Participants were recruited for an experiment on dating preferences. Half of the participants were randomly assigned to complete the study from their own perspective (“as you would make decisions in an online dating context”); half were assigned to complete the study from the perspective of a close friend, whom they knew well (“as s/he would make decisions in an online dating context”). It is important to note that participants in the “friend” condition were given almost no information about the study prior to selecting the friend whose decisions they would be simulating. They were asked to select a friend they know very well, and only after they had entered this person's name and gender (so that it could be “piped” into the rest of the survey) were they informed of the procedures. This rules against the explanation that participants deliberately chose friends for whom they had strong pre-conceived notions in the dating domain.

Participants began by answering some basic personality questions about themselves or their friend so that thoughts about the decision-maker were forefront in their minds. They were then informed that they would be seeing information about five potential dating partners. Participants in both conditions were told that this was just a simulation, and were encouraged to go through with the study even if they (or their friend) were already in a committed relationship.

At the end of the study, they were told, they would be asked to select the partner whom they thought they [their friend] would most want to date. Participants were informed that they would see information about all five partners in three stages. After each stage, they were told that they would be answering some questions about their own [their friend's] decision-making.

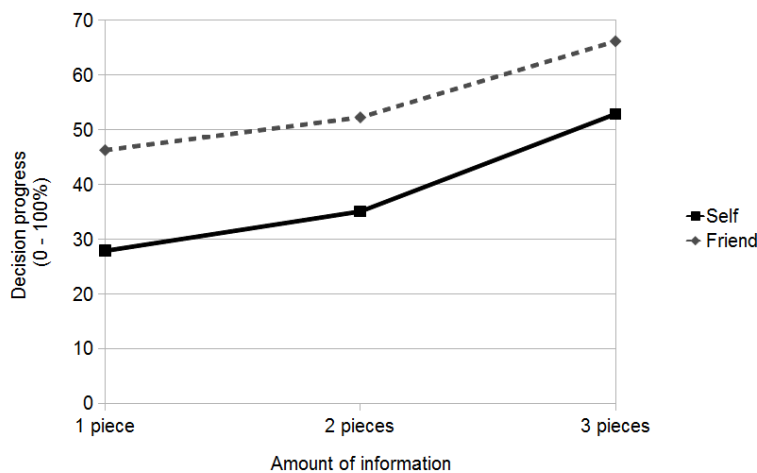
I began by showing participants the first piece of information about each of the five people. This was each partner's "distinctive quality." One partner was very "open," another "funny," another was "interested," the fourth was "informed," and the fifth possessed "conventional good looks." After answering questions related to indecision (described below), participants saw the second piece of information, "hobbies." Participants again answered questions before seeing the third piece of information, "life motto." After completing the third round of questions, participants saw the fourth and final piece of information, "personal flaws." Participants knew all along how many pieces of information they would be seeing.

After Rounds 1, 2, and 3, participants answered two questions. The first was an estimate of likelihood (*decision lean*): I asked participants to make a prediction, based upon the information they had so far, of the likelihood that they [their friend] would end up choosing each of the five dating partners at the end of the study. They estimated that likelihood using a number from 0-100%, with the constraint that all estimates must sum to 100%. The second question participants answered after each round of information was how close they [their friend] would be to a final decision, *decision progress*. They indicated their answer on a slider, with endpoints, "My [his/her] mind is completely open" to "My [his/her] mind is completely made up."

At the end of the study, participants indicated their final decision as to which dating partner they [their friend] would choose.

## Results and Discussion

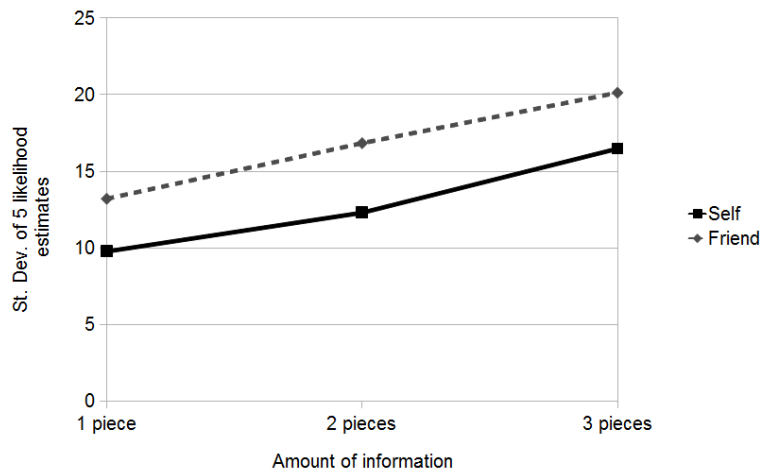
I first analyzed participants' reported *decision progress* by subjecting these ratings to a 2 (target: self vs. other) x 3 (decision round: one, two, three) mixed-design ANOVA, with target as a between subjects factor and information round as a repeated measure. Figure 2 shows participants' decision progress across the three rounds of information. The main effect of information round,  $F(2, 58) = 44.80, p < .0001$ , indicates that as participants accrued more information they anticipated that they and their friends would be closer to a decision. The critical main effect of target,  $F(1, 59) = 7.41, p = .008$ , and the absence of a target x decision round interaction,  $F(2, 58) < 1, p > .50$ , indicate that participants saw their own decisions as progressing more slowly than the decisions of their friends across the entire task. In essence, at each stage in the decision-making process, participants saw themselves as farther away from a decision than their friend would be at the same stage.



**Figure 2:** Decision progress for simulated decisions of self or a friend by amount of information seen, Study 4.

In addition, I explored whether participants saw their own decisions, relative to those of their friend, as less biased toward any one focal option by analyzing the *decision lean* variable. Recall that after each of the three rounds of information, participants indicated the likelihood that they or their friend would end up choosing each of the five partners. I calculated the standard deviation of these five likelihood estimates after each round of information. Lower standard deviations indicate that each option was weighted more evenly (i.e., there was less lean toward any one option). I subjected the standard deviations to the same 2 x 3 mixed-design ANOVA. If participants saw their own decisions as less biased toward any one option, the standard deviation for their likelihood estimates should be lower than the standard deviation of the likelihood estimates they made for their friends.

As can be seen in Figure 3, this was indeed the case. The ANOVA returned a main effect of information round,  $F(2, 58) = 19.23, p < .0001$ , indicating that as participants accrued more information across rounds, their estimates of which partner they or their friend were most likely to pick began to favor a focal partner. Critically, there was also a main effect of target,  $F(1, 59) = 4.77, p = .03$ , and no decision round x target interaction,  $F(2, 58) < 1, p > .70$ . The main effect of target confirmed that participants in the self condition, relative to those in the friend condition, felt less of a lean toward any one option at each stage in the decision. In other words, from the very beginning of the decision to the very end, participants perceived more bias toward a focal option when they were simulating their friend's decision than when they were simulating their own decision.



**Figure 3:** Degree of bias (*decision lean*) in the likelihood of choosing one partner relative to the others in simulated decisions for self and friend by amount of information seen, Study 4.

The results confirm the informal observations of Griffin and Tversky (1992) and expand them to self- and social cognition. Participants thought they were farther away from a decision than their friend would be in the same situation; they also thought that their decisions were less foretold than were their friends' decisions. But does different phenomenology associated with the simulation of decisions for self and other provide an explanation for why people see their own decisions as more exogenous than the decisions of their peers? Study 5 tested this idea.

### **Study 5: Perceived decision progress and exogeneity of decisions**

As in Study 4, participants completed a decision-making task either from their own perspective or from the perspective of a friend. Participants were informed about the American Jobs Act (AJA), a recent stimulus plan aimed at economic recovery in the U.S. They were given

initial information about the attitudes of their [their friend's] political party, which, they were told, either supported or opposed the AJA as it is currently written.

Participants then read two arguments in support of the AJA and two arguments in opposition to the AJA (offered below). They assessed their own [their friend's] decision progress and decision lean at three different times during the presentation of materials. After reading all the information, participants made their final decisions about whether they [their friend] would support or oppose the AJA. Finally, participants answered a series of questions about the extent to which their own or their friend's decision was exogenous.

### *Method*

#### *Participants*

Two-hundred twenty-six people were recruited on Amazon's Mechanical Turk. They were paid \$0.40 for their participation.

#### *Materials and Procedures*

Participants were randomly assigned to complete the study either from their own perspective or from the perspective of a friend who is similar to them in age, socioeconomic status, and political orientation. Those in the friend condition entered their friend's name, and this information was then piped in to the rest of the survey.

Participants began the task by answering some questions about their own or their friend's political orientation. They indicated the extent to which they/their friend is politically, fiscally, and socially conservative on a 1-7 scale from *Very conservative* to *Very liberal*. They also indicated the party with which they/their friend most closely identifies (Democratic, Republican,



Libertarian, Green, Independent). This wording was selected to encourage responses even if participants or their friends were not officially affiliated with a particular party.

The purpose of asking these questions was two-fold. First, it allowed me to tailor the experimental materials to the relevant political party. Second, it ensured that the political beliefs of participants or their friends were forefront in people's minds as they proceeded to the primary task (this was obviously most important for participants who were simulating their friend's decision).

Participants were then introduced to the AJA:

Up for debate now is the passing of the American Jobs Act, a stimulus plan that includes a number of initiatives aimed at increasing the economic standing of Americans – both employed and unemployed – so that they can re-invest in the US economy, making it stronger and healthier. The initiatives include tax cuts for most Americans and most businesses, the funding of public works projects, including efforts to modernize schools and repair dilapidated areas within local communities, and incentives to employers for hiring long-time unemployed workers as well as veterans.

The estimated cost of the American Jobs Act is \$447 billion, meaning that its passing will plunge the US government deeper into debt. This reality has sparked a heated debate among Americans about what, exactly, is the right thing to do. Most Americans agree that the road to economic recovery is putting Americans back to work and increasing overall wealth. The debate centers around whether the American Jobs Act is the best way to accomplish this.

Participants were then randomly assigned to learn either that the majority (65%) or minority (35%) of their/their friend's political party supported the AJA as it is currently written. Before

reading arguments on both sides of the issue, participants were asked to indicate their own/their friend's initial leaning on the issue on a scale from 1 (*Completely opposed*) to 7 (*Completely in favor*). They also reported the strength of their/their friend's current leaning (*decision lean*) using a sliding scale, anchored at *Certain I [he/she] will oppose* and *Certain that I [he/she] will support*. The midpoint of the scale was labeled *Could go either way*. Finally, they indicated how far along (*decision progress*) their/their friend's decision-making was using a sliding scale from 0% (*My [His/Her] mind is completely open*) to 100% (*My [His/Her] mind is made up*).

Participants then read two brief arguments that supported their/their friend's party's stance toward the AJA. Importantly, the content of these arguments did not change by political party identification. After reading arguments in support of the party's stance, they answered the same question about their/their friend's decision lean and decision progress. Following that, they read two arguments against their/their friend's party's stance, and answered both questions again. The arguments participants considered were gleaned from various internet sources, and are summarized in Table 4.

**Table 4:** Arguments in favor of the AJA and arguments in opposition to the AJA, Study 5. Participants first read arguments that supported their [their friend's] party's stance. They then read arguments against their [their friend's] party's stance.

---

Arguments in favor of the AJA

1. The package of tax cuts and spending initiatives could add 100,000 to 150,000 jobs a month over the next year, according to estimates from several of the country's best-known forecasting firms. Many of these jobs will be created through public works projects – hiring workers to update schools or renovate urban areas. These jobs will strengthen infrastructure and make local governments less reliant upon federal aid.
2. The Jobs Act makes business investments tax deductible. If businesses invest money, they can claim tax deductions on those investments. This will incentivize businesses to put money into the economy to support their long-term financial independence.

Arguments in opposition to the AJA

1. The Job Act proposes a “spend now, pay later” approach to economic stimulus. In other words, the initial \$447 billion spent by the US government to promote economic growth will be paid for later mostly by increasing taxes in other areas.
  2. Investing billions to cut the taxes of most Americans may not work. In recent history the government effectively administered \$440 billion in tax cuts, and we are no better off economically than we were then.
- 

After seeing all the information, participants indicated a final decision about whether they/their friend would support or oppose the AJA. They used the same 1 (*Completely opposed*) to 7 (*Completely in favor*) scale to indicate their/their friend's final support for the issue.

After final decisions had been made, participants answered a series of questions about the extent to which party opinion influenced their own/their friend's decision-making. The first question (“To what extent do you think your own [your friend's] attitude was [would be] influenced by the information we provided about the attitudes of [party name]?”) was answered on a 1-5 scale, anchored at *Not at all* and *Entirely*. They also answered the same question about the extent to which the average person would be influenced by the position of their party. Next, participants answered the primary dependent measure of exogeneity. As in Studies 3A and 3B,

participants were asked to imagine that they/their friend had been told at the outset of the study that their/their friend's party had actually held the opposite position – that is, that instead of being told that a majority [minority] of their/their friend's party supported the Act, participants imagined that, in fact, a minority [majority] of their/their friend's party supported the act. Participants indicated what they thought their/their friend's final opinion about the AJA would have been under those circumstances, using a scale identical to the one in which they reported their/their friend's actual final decision.

Finally, participants answered a question assessing their construal of conformity. Participants were asked whether they/their friend would rely upon the information of their party when arriving at a decision, and if they/their friend did, to select the statement that captures the way in which the information would be used. Participants selected from one of the following: *I/They did not rely at all upon the attitudes of [party name] in making my/their decision* [pure exogeneity]; *I/They just did what other [party name] did* [pure conformity]; and *I/They used the attitudes of [party name] to help me/them make my/their own decision*.

### *Results*

First, I tested whether information about party support for the AJA influenced participants' estimates of their own/their friend's approval of the AJA, both at the beginning of the study (initial leaning) and at the end of the study (final decision). Next, I assessed participants' estimates of the effect of party opinion on their own/their friend's final decision, as well as the extent to which these estimates of influence were accurate, given the observed effect. Third, I tested whether participants simulated their decisions as starting from a more even-keeled point than the decisions of their friends, and whether perceived decision progress was slower for

self than other. Finally, I explored whether differences in decision lean and decision progress served as an explanation for self/other differences in perceived decision exogeneity.

**Actual effect of party opinion on participants' decisions.** The first analysis tested whether the information I provided to participants about political party stance swayed participants' initial leaning and final opinion of the AJA (and whether the information had a corresponding effect on participants' predictions of their friends). Participants' ratings of initial lean and final opinion (for either self or friend) were subjected to a 2 (target: self/other) x 2 (party position: support/oppose) ANOVA. As predicted, information about party support swayed participants' initial lean on the issue,  $F(1, 222) = 15.45, p < .0001$ , as well as the final decision they offered,  $F(1, 222) = 10.71, p = .001$ . The main effect of party position was not qualified by a target x party position interaction, nor was there a main effect of target,  $F_s < 1$ . Thus, knowing that one's party (or one's friend's party) supported the AJA swayed initial leanings and final decisions toward greater support of the issue ( $M_s = 4.15$  and  $4.90$  for initial leaning;  $M_s = 4.13$  and  $4.90$  for final decision, for the minority and majority support conditions, respectively). The next analysis explores participants' estimates of the effect that this information exerted on their own decision, compared with the effect they predicted that party position would have on their friend.

**Perceived effect of party influence.** To determine whether participants perceived influence in their own or their friend's decisions, I subtracted the attitude they reported as their/their friend's final decision about the AJA from the attitude they reported they/their friend *would have* reported if they had been told that their party's position was actually the opposite. I then took the absolute value of this difference score (where higher numbers represent a larger

effect of party influence) and submitted this to a between-subjects *t*-test.

Participants thought that information about party position would exert less of an influence on their own decision-making ( $M = .57, SD = .85$ ) than it on the decision-making of a friend ( $M = 1.19, SD = 1.32$ ),  $t(224) = 4.21, p < .0001$ . These estimated effects were once again differentially accurate. Perceptions of influence for the self *underestimated* the true effect of party position ( $M = 1.01^6$ ),  $Z = 5.49, p < .0001$ , whereas perceptions of influence for a friend *overestimated* the true effect, though not to a significant degree,  $Z = 1.48, p < .14$ . Once again, it is useful to note the magnitude of errors for self and other: People's underestimation of the effect of party position on their own decisions was almost four times greater than their overestimation of the effect of party position on others.

**Perceived decision progress and decision lean.** Next, I explored self/other differences in participants' decision simulation. Two variables were of interest. The first variable of interest, replicating Study 4, was participants' perceptions of *decision progress* – how close they were (or their friend would be) to a final decision. This variable was measured three times during the study – once after learning their/their friend's party's position, once after reading arguments in favor of that position, and once after reading arguments against that position. The second variable of interest was the extent to which participants perceived themselves/their friend as leaning toward one side of the issue throughout the decision-making process (*decision lean*). In essence, this variable captured the extent to which people saw their own, versus another person's decision as starting from a true neutral point – 50/50, and then tracked their leaning as they

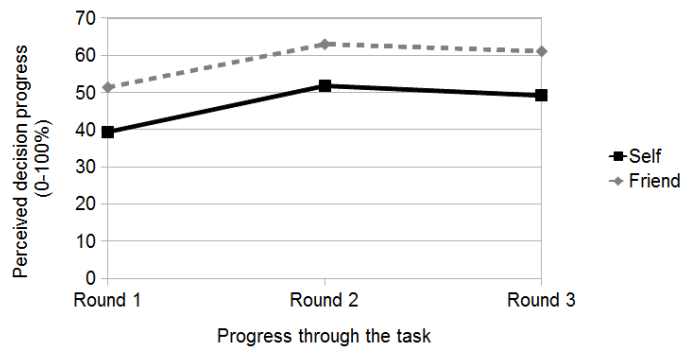
---

<sup>6</sup> In calculating the *true effect* of party influence, I used the party influence effect for participants in the self condition only. This estimate, which is a direct indication of how much people's attitudes were swayed by party information, is a cleaner measure of the true effect of party influence than is an estimate that includes the effect of party influence on people's predictions about what their friends would think.

progressed through the study.

**Decision progress.** The three estimates of decision progress were subjected to a 2 (target: self/other) x 3 (round: 1, 2, 3) mixed-design ANOVA. As in Study 4, this analysis returned a significant main effect of target,  $F(1, 224) = 15.47, p < .0001$  a main effect of round,  $F(2, 223) = 44.54, p < .0001$ , and no significant target x round interaction,  $F(2, 223) < 1$ . As can be seen from Figure 4, at each point in the decision-making process, participants saw themselves as farther away from a final decision than their friend would be.

It is interesting to note that although participants' estimates for friends began and remained above the 50% threshold across rounds, participants' own estimates never exceeded 51%. This suggests that participants saw their friend's decision as more of a foregone conclusion after being exposed to information that supported the views of their friend's party, but never felt more than half way toward a decision when it was participants themselves who were forming an opinion. Thus, on one measure tapping differences in the phenomenology of simulating one's own decision versus another person's, I obtained evidence that is very consistent with the idea that one's own decision, but not that of another person, feels as if it is constantly open to exogenous revision.



**Figure 4:** Decision progress for simulated decisions of self or a friend across rounds of information, Study 5.

**Decision lean throughout the decision-making process.** The second measure of interest was participants' perceptions of the extent to which they, and their friend, were leaning toward a particular side of the issue before arriving at a final decision. It was hypothesized that participants would see themselves as less biased toward one side or the other throughout the decision-making process. In line with the idea that people see their own decisions as starting more from a 50/50 point than others' decisions, I anticipated that the effect would be strongest in the initial estimates of bias. In other words, before being exposed to arguments for and against a party opinion, but after learning where one's own or one's friend's party stands on the issue, people should see themselves as having less of a lean toward their party's position.

I subjected the three ratings of bias (one after exposure to party opinion, one after reading arguments in support of one's party, and one after reading arguments opposing one's party) to a 2 (target: self/other) x 3 (round: 1, 2, 3) mixed-design ANOVA after recoding the ratings so that higher scores reflected more bias toward one's own party. This analysis returned a significant

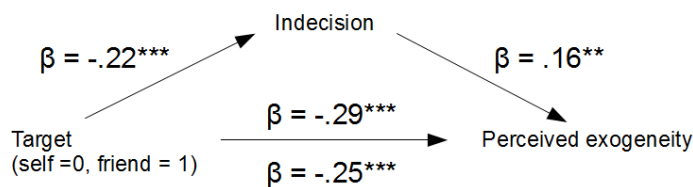


main effect of target,  $F(1, 217) = 6.25, p = .01$ , a significant main effect of round,  $F(2, 216) = 8.52, p < .001$ , and a significant target x round interaction,  $F(2, 216) = 3.15, p < .05$ . Although estimates for the self were lower than estimates for friends across all three rounds, the interaction indicated that the self/other difference at round 1,  $F(1, 217) = 13.66, p < .001$ , was greater than that observed in Round 2,  $F(1, 217) = 1.72, p < .20$ , and Round 3,  $F(1, 217) = 3.49, p < .07$ . Thus, as predicted, participants thought their own decision started at a more even-keeled (and less biased) place than the decisions of their friends.

**Decision exogeneity as a function of meta-cognitive indecision.** Participants' estimates of decision progress and decision lean were highly correlated with one another across three rounds of information,  $r = .86$ . As participants felt nearer to a final decision (progress), they also felt greater pull toward one side of the issue or the other (lean). Thus, participants' six ratings were standardized and averaged to create a single index of *indecision*. One can think of this index as ranging in metacognitive experience from *The decision is still open and could go either way* to *The decision is a foregone conclusion*. As is evident from the preceding analyses, participants did, on average, perceive greater indecision for the self than for their friend,  $F(1, 217) = 11.24, p < .001$ . In the next analysis I tested whether this difference in phenomenological experience gave rise to the sense that one's own decisions are more exogenous than others'.

The two direct effects of self/other perspective on both exogeneity and indecision have already been reported. People's own decisions felt more exogenous than those of their friend, and people experienced greater indecision for self than other (see Figure 5 for corresponding beta weights). To test for mediation, I entered both target (self/other) and the indecision index into a regression predicting exogeneity. In this analysis both variables remained significant predictors,

$ts = 3.81$  and  $2.51$ ,  $ps < .02$ , for target and indecision, respectively, and a Sobel test indicated that this model fit the statistical definition for partial mediation,  $Z = 2.13$ ,  $p < .05$ . Thus, one reason that people's decisions seemed more exogenous than the decisions of their friends was that people experienced more indecision on the way to making up their own mind than they experienced when simulating their friend's decision.



**Figure 5:** Meta-cognitive indecision partially mediates self/other differences in decision exogeneity, Study 5. Standardized beta-weights are displayed.

**Additional tests of exogeneity.** At the end of the study, participants were asked a series of face-valid questions about their perceptions of whether they or their friend would be influenced by the information provided about party support. First, participants were asked about the extent to which they/their friend would be influenced by the position of their/their friend's party. They were also asked about the extent to which the average person would be influenced by party stance. Responses to these two questions (which ranged from 1-5, *Not at all* to *Entirely*) were submitted to a mixed-design ANOVA, with target (whether the question was about the self or a friend) as a between-subjects measure and question as a within-subjects measure. The analysis returned a main effect of target,  $F(1, 224) = 14.09$ ,  $p < .001$ , a main effect of question,  $F(1, 224) = 247.08$ ,  $p < .0001$ , and no significant target x question interaction,  $F < 1.65$ ,  $p > .20$ .

This pattern indicates that participants saw both their own and their friend's decisions as more exogenous than the decisions of the average person, but also saw their own decisions as more exogenous than decisions made by a friend.

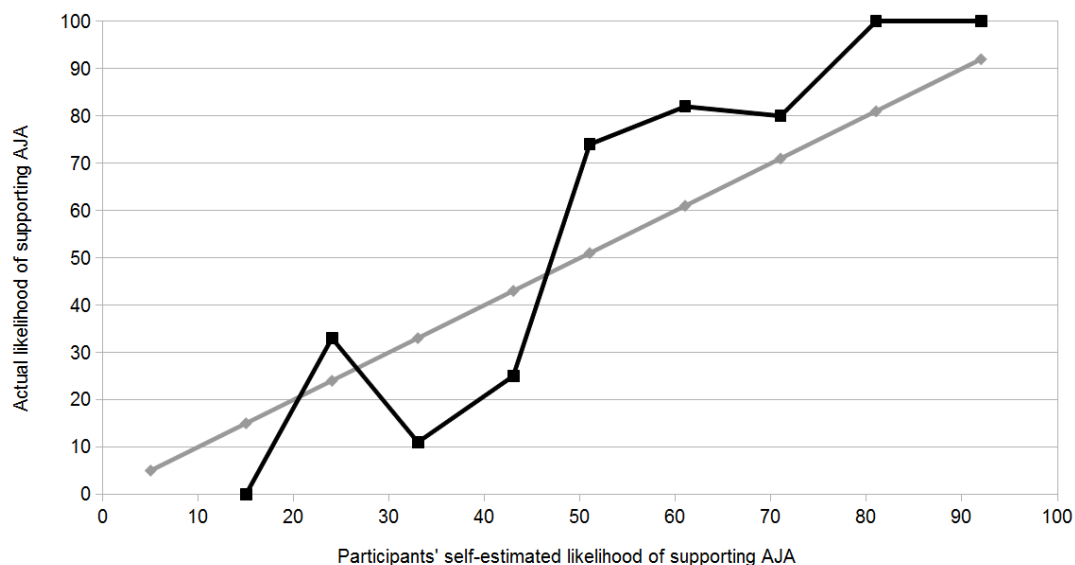
The next question participants answered was about the extent to which they used the information provided about the position of their party when forming their decision or (the corresponding question) the extent to which their friend would use the information provided about their party's position when forming their decision. Once again, participants reported using the information to a lesser degree than their friend would ( $M_s = 1.94$  and  $2.59$ ,  $SD_s = .90$  and  $1.02$ , for self and other, respectively),  $t(224) = 5.07$ ,  $p < .0001$ .<sup>7</sup> A Sobel test revealed a marginally significant pattern of partial mediation by the indecision index,  $Z = 1.92$ ,  $p = .055$ , suggesting that participants' relative blindness to their own use of party information was in part due to the indecision they felt while forming their decision.

**To what extent are decisions *actually* foretold?** The data collected here allowed me to test whether people, when expressing indecision on the part of the self, were truly as far away from a decision as they thought they were. Even though participants reported feeling indecision, it may well be that participants were underestimating their *actual* progress to a decision. To determine this, I examined participants' final decisions as a function of their initial estimate of how likely they were to support versus oppose the AJA. Thus, for participants in the self condition only, I recoded their final decisions as either *support for the AJA* (65% of cases),

---

<sup>7</sup> Another question asked participants "Which of the following statements best captures how you [your friend] used [would use] the information?" Participants selected from three nominal response options (described in the Method section). Participants' responses provide additional evidence for perceived exogeneity on the part of the self. In the self condition, 54% of people indicated that "I did not use the information," while in the friend condition, only 40% of participants indicated the corresponding statement. The remainder of participants indicated some degree of influence by party position. These self/other differences in responding were significant,  $\chi^2(1, N = 223) = 4.25$ ,  $p < .05$ .

*opposition to the AJA* (31%), or *indifferent* (3%), based upon whether their final decision was above, below, or at the midpoint of the decision scale. Next, I examined participants' initial predictions about how likely they would be to support the AJA at the end of the study (these were offered after participants learned their party's stance, but before participants had been given any real information about the Act). I then plotted the actual distribution of support for the AJA against participants' estimates of how likely they would be to support the AJA before reading any substantive information. The results of this analysis are depicted in Figure 6.



**Figure 6:** Relationship between participants' perceived decision progress (after learning the stance of their party) and their actual progress toward a decision, Study 5. The reference line is depicted in light gray.

Of primary interest is the area in the middle of the graph – the point (~50%) at which participants estimated that their decision could go either way. Immediately visible is that at that point, on average, participants were actually farther along in their decision than they thought.

Participants who, on average, thought that they were 51% likely to favor the AJA at the end of the study ended up favoring the AJA a full 74% of the time. Those who thought they were 61% likely to favor the AJA ended up favoring the Act 82% of the time. On the other side of the 50% mark, those who thought they were 58% likely to *oppose* the AJA (seen as 42% likely to support it in Figure 6) in fact opposed the AJA 75% of the time, and those who thought they were 66% likely to oppose the AJA in fact ended up opposing it 89% of the time. Thus, people's perception of their initial decision start-point turned out to underestimate just how far along in the decision participants actually were.

### *Discussion*

Study 5 tied self/other differences in perceived decision exogeneity to the meta-cognitive experience of indecision. People experienced more indecision when they simulated their own decision-making relative to when they simulated someone else's; because of this, they underestimated the impact of extraneous variables on their own decisions, while acknowledging the impact of these variables on others.

People estimated that their friends' views toward the AJA would be more susceptible to party influence than their own views would be. They also, in a face valid way, reported that their friends would use information about their party's stance more than they themselves would. In both instances, people were wrong about themselves. The views of the party impacted people's final decisions about the AJA, whether that final decision was participant's own or the decision they expected their friend would make. However, participants showed little insight into just how much impact that information had had on them. Participants in this study wildly overestimated the exogeneity of their own views, but estimated the exogeneity of their friend's views fairly

accurately. Why did participants “miss” their own susceptibility to influence?

Data from Study 5 suggests that perceptions of exogeneity are due, in part, to the meta-cognitive feeling that one's decision is still open to revision. At all points in the study, participants experienced more indecision when deciding for themselves than when deciding for someone else. They felt that their own decisions started from a more even-keeled place than their friend's decision would. They also felt farther away from a final decision at all points in the study than they anticipated their friend would be. Thus, one reason people may underestimate the impact of various biasing factors upon their own decisions is that they fail to experience the “pull” that these factors have on their own decisions. Regardless of the external circumstances, people feel that their decisions are open and yet to be determined, and this meta-cognitive feeling may drown out actual biasing effect of a variety of extraneous variables.

Data from Study 5 also suggest that this experienced indecision on the part of the self is, in large part, illusory. Participants' estimates of decision progress underestimated just how far along they actually were in their decisions. Thus, someone who estimated that he was leaning ever-so slightly toward one conclusion (i.e., that he was 51% likely to support the AJA) in actuality was more than 70% likely to arrive at a final decision that conformed to that initial lean. From the initial introduction of the biasing information, people's decisions were more foretold than they could appreciate. Their reported indecision was a somewhat poor reflection of true amount of indeterminacy in participants' final decisions.

### **Responding to a self-knowledge riddle**

According to social-psychological lore, Amos Tversky often observed that “Everyone always knows what you're going to do before you do.” The data provided here confirm this

suspicion and offer an explanation for it (which, quite appropriately, comes from Tversky's – and Griffin's – own musings).

First, people do seem to have superior insight into others' decision-making than their own. They understand the impact of extraneous variables on other people's thoughts, but deny this same impact in themselves. Tversky's remark, however, reflects not only this superior accuracy, but the time-course of this accuracy: That the self is late to the party in prospective understanding of behavior – and that peers have a temporal advantage in knowing what one is likely to do. The data herein suggest an answer to this problem as well. People do not seem to register just how close to a final decision they are. The meta-cognitive experience of indecision may interfere with people's understanding of just how rapidly one's own decision is progressing toward a conclusion. Because peers do not simulate this same degree of indecision, they have a clearer picture of a person's decision trajectory than the self does.

## Chapter 5

### General Discussion

“I wear the chain I forged in life... I made it link by link, and yard by yard; I girded it on of my own free will, and of my own free will I wore it.”

*-Marley's ghost, Charles Dickens, A Christmas Carol*

Suppose for a moment that in Dickens' classic meeting between Ebenezer Scrooge and the ghost of Marley, Scrooge, and not Marley, had reflected upon the life of the deceased. Would he have seen, as Marley himself did, a solitary chain-maker, who forges each link – each choice – with grim self-determination? Or might he have told a different tale about how the chain around Marley's neck, and, indeed, each individual link, came to be?

The data presented herein suggest that Marley and Scrooge – self and other – would diverge in their understanding of the source of these decisions. Whereas people feel that their own decisions and behaviors emerge from exogenous choices that are relatively invariant to extraneous influence, they have an altogether different sense of the source of others' decisions. People see others' decisions as comparatively less exogenous – more susceptible to direct shaping by forces extraneous to the agent's will and less open to intermittent revision. The results of six studies lend support to this self/other asymmetry in perceptions of exogeneity and provide an in-road to understanding how and why these differences emerge.

Findings from Chapter 2 suggest that people perceive greater active choice in their own decisions than other people's. Participants in Study 1 indicated that, compared to the average



person, their daily decisions involved more active choice and deliberation. In Study 2, even behaviors that, from the outside, appeared to involve minimal choice – such as going along with a group or following norms – were construed more as exogenous acts for the self than for others. Thus, people saw their own acts of conformity as emblematic of their choice to conform, whereas others' acts of conformity were construed with less reference to intervening choice processes.

One consequence of perceiving one's own decisions in terms of exogenous choice is that influences from extraneous sources should be lost or drowned out in people's understanding of the forces that shape their own decisions. Thus, compared to how they view others' decisions, people (erroneously) see their own decisions as freer from direct external sway. Results from Studies 3A, 3B, and 5 confirm this hypothesis: In all three studies, people underestimated the true effect of peer influence on their own decisions, believing (wrongly) that their decisions were independent of the collective opinion. People's estimates of the degree to which their peers were influenced were far more accurate (3-4 times more accurate) than their estimates for the self.

Finally, Studies 4 and 5 sourced these self/other differences in perceived exogeneity to the way in which people simulate their own versus others' decision-making. In simulating the choices of a friend, people perceived greater initial bias toward one of the decision options, and faster progress through a decision. Their simulations of their own decisions, by comparison, indicated a great deal more indecision: Decisions made by the self started at a more unbiased starting point, and rarely did estimates of decision progress for the self exceed 50% – the point at which a decision feels mostly made. Study 5 tied these differences in decision simulation to self/other differences in perceived exogeneity. One reason decisions feel freer for the self than

for other people is that decisions for the self feel more open to revision at all points along the way. In this, people are once again overestimating their own freedom. An ancillary analysis from Study 5 suggested that people were actually much farther along in their decision-making than they they knew.

A number of questions and future directions are open for further inquiry. In what follows, I will address some of the more pressing issues related to the work.

*Direct versus indirect influence: The true self/other asymmetry?*

One way of conceiving of self/other asymmetries in decision exogeneity is to say that, compared to others' decisions, people feel their own are immune to extraneous influences. If this were the case, one would expect that across decisions and across influences, people would always assume that they are comparatively more unaffected than their peers. I would argue, however, that this conception of exogeneity misses a critical point, and fails to capture the pattern of responding in these six studies. Decision exogeneity is not about total immunity from social influence, but about the capacity for decision-makers to consent to being influenced – i.e., to choose whether or not to allow extraneous variables to exert an influence on the decisions they ultimately make, and to avoid having their decisions contaminated by unwanted influences.

Take a somewhat straightforward case of social influence: the impact of one's family and one's childhood environment on shaping a person's current values or ambitions. In early work leading up to this dissertation, I attempted to demonstrate a self/other difference in the perceived impact of these variables on one's own or a friend's values and ambitions. The prediction was that if people feel they are utterly immune to extraneous influence, they should see less of an

impact of these variables on their own values and ambitions than on others'. Yet, in three studies, I failed to obtain this difference, and sometimes I obtained the opposite result.

In one study, for example, I asked participants to imagine that they or a friend they knew well had grown up in a different family or a different geographical location, and to reflect upon the extent to which their/their friend's values and ambitions would be the same as they currently are. Very often, responses for self and other were identical; in some cases participants said their values and ambitions would be more impacted by such a change than their friend's would. Whatever the self/other asymmetry was, it certainly was not an outright denial that the self is, in some measure, a product of its environment.

Instead, the self/other asymmetry in exogeneity seems to be more about the route by which extraneous influences exert their influence upon the agent. As depicted in Figure 1 and demonstrated in Study 2, decision exogeneity is really about whether extraneous variables are perceived as exerting a direct versus indirect effect on one's decisions and behavior. People see their decisions as more exogenous than others' in the sense that they see themselves relative to others as having a greater ability to choose whether or not to be affected by other people, information, or other social pressures. Thus, for the self, the impact of an extraneous pressure on a final decision is mediated through the decision-maker's choice of whether or not to be swayed. For others, this intermediate choice is less apparent, and extraneous variables seem to exert a direct effect on decisions, rendering them (seemingly) less exogenous. In other words, people, themselves, feel they ultimately consent to being influenced, whereas others *just are* influenced by extraneous forces.

This analysis helps to explain how it is that people can believe both that they and others

are products of their environment *and* that their decisions are more exogenous than others' are. People clearly grow, learn, and change based upon extraneous influences from their social environment – and, it seems, both self and other acknowledge this. *How* these variables exert an influence, though, may be the key to understanding this particular self/other asymmetry. The self may experience change because of choices to accept and learn from these external sources; others, though, may just change in more or less direct proportion to the strength of the influence.

### *Exogeneity and mere self-enhancement*

The experience of meta-cognitive indecision as a mechanism underlying self/other asymmetries in decision exogeneity is essentially a non-motivational account of why people perceive themselves as possessing more agency than others. However, an alternative explanation of many of the findings presented in this paper is motivational in nature. This alternative explanation argues that because people *want* to believe that they are freer than others, they experience their own thoughts and decisions, relative to the thoughts and decisions of others, with more of an exogenous signature. In simplest terms, perhaps people believe their decisions are more exogenous than others' merely because that is what they want to believe.

Two versions of this objection prompt two different responses with regard to the current work. The first version of this alternative explanation is that self/other differences in perceived exogeneity are *nothing but* motivated beliefs about the self's superiority to others. Here, it seems unlikely that a desire to think well of the self could explain the variety of responses observed in these studies. A survey of participants' responses in Study 1 suggests that the items on which participants exhibited the greatest bias toward seeing exogeneity in the self relative to others

were decisions centering around what to have for lunch and dinner, what time to go to bed, what time to get up in the morning, and decisions about class attendance and homework. Only two of these (the last) seem to carry much implication for one's global self-worth, and so it seems implausible that self-enhancement underlies the effect. Quite notably, participants saw themselves as relatively more passive than others in their decisions to engage in potential “time-wasting” activities (watching TV and going on Facebook), indicating that they were comparatively less agentic than others at avoiding these things. Thus, it seems unlikely that people see their own decisions as more exogenous than others' simply because they are motivated to do so.

Notwithstanding, a weaker version of this alternative explanation is that self/other differences in presumed exogeneity are felt independent of a person's ongoing motivations, even though the belief in oneself as an exogenous agent is beneficial to one's global self-worth. The possibility that conceiving of oneself as an exogenous agent is rewarding, even if reward is not the only reason that people see themselves as more exogenous than others, seems quite reasonable. There is no doubt that the motivation to see one's self in a positive light plays a role in a host of asymmetrical beliefs about self and other (for reviews, see Critcher, Helzer & Dunning, 2010; Helzer & Dunning, 2012), likely including this one.

To this end, it is interesting to note that culturally-based differences in models of agency (disjoint versus conjoint) include both descriptive and prescriptive elements. In cultures favoring disjoint models of agency, decisions arising from free, exogenous choice are not merely agentic, but praiseworthy, as well (Savani et al., 2010; Markus & Kitayama, 2003; Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006). It seems quite plausible that the desire to see one's

self as a cultural exemplar – as a being who exhibits culturally-accepted standards of behavior (such as free, unbounded choice) – is a key factor that feeds into the self/other asymmetry documented here.

It may be, though, that the normative component of exogeneity (i.e., the message that it is *good* to be an independent decision-maker, uninfluenced by extraneous inputs) exerts its greatest influence on the *development* of the belief that one is an exogenous agent (perhaps more so than others are). Once such a belief is crystallized it persists without further motivation to think well of the self. There is evidence, for example, that children (in an American sample) show an early tendency to give more causal weight to their own agentic actions than to the actions of another agent when trying to disambiguate cause-and-effect in probabilistic settings (Kushnir, Wellman, & Gelman, 2009). How might this early bias develop?

Embodied interaction with the world, which allows for learning of contingencies between one's own initiated movements and environmental effects (Thelen, 1995) may provide the basis for the children's experience of agency. These experiential cues then may combine with a variety of social-cultural learning mechanisms that stress dominant models of agency. For example, there is good evidence that cues to agency are embedded deeply within linguistic structure (Fausey, Long, Inamori, & Boroditsky, 2010). Through everyday interaction, children will learn to narrate their own experience, as well as that of other people, in terms of culturally-specific conceptions of disjoint or conjoint agency. They will also be rewarded for adopting dominant models of agency within their culture. Children in cultures valuing disjoint agency, for example, will be reinforced both for outward behaviors that display exogenous action as well as for narrating their experiences in terms of their own independent thoughts and choices.

Given that cultural messages about agency are communicated via early learning, ongoing cultural norms, and linguistic structure, it seems unlikely that asymmetries in viewing the self more than others as an exogenous agent are due merely to a person's ongoing motivations. Instead, it seems to be engrained deeply, emerging out of cultural expectations (which may include motivational components) and direct sensorimotor interaction with the world. Once this belief is in place, it may operate semi-independently of a desire to think well of the self.

*How does culture produce biases in perceived exogeneity?*

On a related note, while it is clear that cultural factors play a large role in determining people's sense of themselves as agents, there is a great need for future research to explore how culture might shape *asymmetric* perceptions of agency. There are many possibilities for how cultural differences in agency may play out in terms of self/other discrepancies. The following list is a non-exhaustive sampling of these possibilities, with comments on what each possibility (were it true) might say about the origins of this bias.

First, it may be that people understand their own behavior relative to others' behavior more in terms of the model of agency that is culturally-prescribed. Thus, individuals from cultures featuring conjoint models of agency may detect more “conjoint-ness” in their own behavior than the average person's, just as individuals in these six studies reported greater exogeneity in themselves relative to others. Such a finding might highlight the important role that normative concerns (seeing oneself relative to others as a cultural exemplar) play in people's perceptions of themselves as agents.

Second, it could be that people from cultures with conjoint models of agency detect less

exogeneity in their own behavior overall, but still see themselves as relatively more exogenous than other people. Results of this kind might point a finger to the importance that experiential cues (such as meta-cognitive components of decision-making) play in people's conceptions of their own agency relative to others.

A third possibility is that self/other asymmetries in perceptions of exogeneity are unique to cultures featuring a disjoint model of agency, and that individuals from other cultures may see just as much exogeneity in others' behavior as they see in their own (see, for example, Balci et al., Dunning, & Miller, 2008). Such a finding might implicate the role of self-enhancement in producing the results obtained here. Insofar as individuals from East Asian cultures, for example, are less prone to the self-enhancement biases observed in individuals from Western cultures (Heine & Hamamura, 2007), it could be that the presence or absence of a self/other asymmetry in exogeneity for Westerners and Easterners, respectively, would reflect a broader tendency toward and away from self-enhancement more generally.

Finally, perhaps a meaningful cultural account of agency would look not only at cultural differences in the concept of agency, but also at differences in the conception of self (cf. Heine, 2005). Thus, it is possible that asymmetries in perceptions of agency do exist cross-culturally, but that one must broaden one's scope in terms of the units along which these asymmetrical beliefs hold (for a thoughtful application of this kind of reasoning, see Hoshino-Browne et al., 2005). Thus, before beginning a full-blown cross-cultural inquiry into this topic, researchers would need to first nail down how it is that individuals from non-Western cultures cleave the distinction between “self” and “other,” and then apply this understanding to culturally-specific models of agency.



*Wrong about ourselves, yes. Right about others?*

Across studies 3A, 3B and 5, people consistently saw their own decisions as more exogenous than others'. Also consistent across these three studies, people's overestimation of their own exogeneity was 3-4 times less accurate than people's underestimation of others' exogeneity. The only inconsistency in the data across studies is whether people's understanding of others is, in an absolute sense, accurate or biased. In Studies 3A and 3B, estimates of others' exogeneity significantly underestimated the actual degree to which others were free from influence; in Study 5, people still underestimated others' exogeneity, but not to a significant degree.

There may be a number of reasons for this discrepancy, and these reasons vary in the extent to which they are theoretically informative. One of the more interesting possibilities is that participants in Study 5 (whose estimates of others did not differ from reality) were assessing the exogeneity of a known other, whereas participants in the other two studies were assessing the exogeneity of "the average person." This would suggest that people might have good awareness of the effects of extraneous variables on people in general, but an even better awareness of how much their friends, family members, and acquaintances are swayed by these forces.

A second difference that may be informative is that the task in Study 5 was a truer simulation of actual decision-making than were the tasks in the other studies. That is, participants in Study 5 went all the way through a hypothetical decision, including consideration of relevant arguments, to assess their friends' exogeneity. Perhaps doing so allowed them to experience more indecision than was present in the tasks facing participants in Studies 3A and

3B, leading to more accurate estimates of actual exogeneity.

This small discrepancy notwithstanding, there are some general conclusions to be drawn with regard to the accuracy of people's perceptions of decision exogeneity. First, people in these studies were way off with regard to how exogeneous their own decisions are. Second, people's understanding of others' exogeneity was much better, and much more reflective of reality, than their understanding of their own exogeneity. Third, the likelihood that one would accurately assess the amount of exogeneity present in a peer's decision was and is, on average, much higher than the likelihood that one would accurately assess one's own exogeneity. Thus, on all important metrics, people showed superior insight into the amount of freedom present in their peers' decisions, but failed to apply this same insight to understanding themselves.

#### *Implications for social-psychological well-being*

People's overestimation of their own decision exogeneity may carry downstream consequences both for their interactions with peers and for their understanding of themselves in relation to the world. Thus, these errors may have real implications for social and psychological well-being.

**Implications for getting along with others.** Because exogeneity is a normative as well as descriptive conception of agency, seeing one's own thoughts and decisions as more exogenous than the average person implies that people will see their own decisions as more rational, valid, and defensible than the average person's. Similarly, seeing others' decision-making as comparatively more open to extraneous influence than the self's paints others' decisions as less reliable and more whimsical than those made by the self. The consequences for these

judgmental errors may be widespread and problematic.

Relevant to this, Kennedy and Pronin (2008) have shown that conflict resulting from disagreement on specific issues is escalated by the belief that the other person's views are more biased than one's own. In these studies, participants rated those with whom they disagreed as more driven by self-interest or ideology, and as a result, reported less willingness to cooperate with them. It seems likely that one might obtain the same results if, instead of focusing upon other people's beliefs and the biases that they may reveal, people appealed to the misguided sense of their own decisions are more exogenous than another person's. Where these two different lines of research converge is on the ease with which one might, as a result of seeing others as more biased or less exogenous, dismiss the other person's position.

Another potentially negative social consequence of this asymmetry stems from the results of Studies 4 and 5. People failed to register the amount of indecision present in others' decision-making, imagining that others' decisions were more foretold from the start than their own. This difference in phenomenology may decrease observers' sense of empathy for decision-makers facing tough choices. When deciding on a place to work, a house to buy, or even just which dinner to select from a menu of delicious options, observers will likely fail to appreciate just how agonizingly difficult these choices can be for the decision-maker. Thus, they may be less empathetic while the decision is being made (“This can't be *that* tough of a choice— get on with it!”) as well as after the decision is made, particularly when the decision proves sub-optimal (“Well, you should have thought about it more carefully!”).

**Implications for knowing the self.** The other error documented in this paper – that people think their decisions are more exogenous than they actually are – likely carries both costs

and benefits to people's self-understanding. On the positive side, it is widely speculated that a belief in free will, self-determination, or personal control is a psychologically beneficial illusion. This belief has been supported by several lines of empirical research (Langer, 1975; Ryan & Deci, 2000; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000; Vohs & Schooler, 2008), lending credence to the idea that some degree of felt personal control is probably motivating (or at least that *lacking* a feeling of ownership over one's actions is demotivating). Notwithstanding, the crucial question unanswered by all extant literature is not whether unrealistic beliefs about personal agency or exogeneity *can* be psychologically beneficial, but whether such beliefs are necessary for psychological functioning, and, if so, whether there are boundaries on the relationship between unrealistic beliefs about personal freedom and psychological well-being.

It seems quite likely that in certain situations, unrealistic beliefs about the extent to which one is an exogenous agent may be intra-personally harmful. It is clear that seeing the self as an unbounded agent can lead to errors in self-assessment, particularly about one's future achievements (Helzer & Dunning, 2012). When these errors are in consequential domains, putting too much stake in one's ability to willfully control the future may lead to dashed expectations and costly mistakes. Similarly, successful planning for the future may require a full-on acknowledgment of just how susceptible one is to extraneous influences and environmental snags. Understanding the bounds on one's agency may allow people to plan for the future in a way that ultimately gives them more *actual* control over the situation. For example, dieters who understand their susceptibility to the siren's call of junk food may re-claim control over their behaviors by opting not to stock the house full of temptations.

In addition, it is possible that the psychological literature has overstated the importance of

personal control in its models of psychological well-being. Without a doubt, feeling more control over one's life than is objectively warranted may lend psychological benefit in many documented cases, but there are clearly important exceptions to this rule that could serve as the basis for interesting psychological research. It seems, for example, that, at their extreme, feelings of exogeneity, like feelings of freedom more generally (Schwartz, 2000), may prove stifling. Individuals who constantly attempt to exert their influence upon the world and mold it to their liking will incur failure more often than they will success, and this may lead to paradoxical effects on their feelings of general well-being. In addition, conceiving of one's self as an exogenous agent means that when decisions go awry, the person has no one but him- or herself to blame. Thus, the sense of one's self as an exogenous agent may prompt feelings of regret or dissatisfaction just as easily as it does pride, security, and self-praise.

Similarly, common sense suggests that the acceptance of the limits of control may be just as psychologically beneficial as continued striving to a fruitless end. If exogeneity is the belief that one has single-handedly authored a decision or the course of one's life, perhaps there is some deep benefit to acknowledging the contributions of one's co-authors along the way. There may be tremendous psychological benefit to understanding one's inseparability from the agents, situational forces, and random events that have brought a person to a particular point in their lives. If there is, perhaps weakening the illusion of exogeneity is an alternative route to well-being.

#### *Meta-cognitive components of free will and the perverse effects of free will on decision making*

The studies here document a heretofore unstudied meta-cognitive cue that gives rise to

the sense of free will: indecision. The feeling of indecision along the way to final position provides the sense that at any point along the decision-making path, one can revise one's current conclusion. As a result, whatever conclusions are eventually arrived at seem to have arisen from an exogenous decision-making process. Thus, this work contributes to a broader literature identifying experiential cues to free will (Aarts & Van de Bos, 2011; Preston & Wegner, 2008; Van der Weiden, Aarts, & Ruys, 2011; Wegner & Wheatley, 1999). However, this work takes the additional step of exploring how the relative presence and absence of these cues in self- and social cognition help to explain a broader tendency for people to see themselves as possessing more free will than others.

Indecision as a meta-cognitive cue to exogeneity may take many forms, some of which were not explored here. Consider, for example, results from Koehler (1994), who asked decision-makers to provide answers to a number of trivia questions and then to assess their confidence in the answers they had just generated. When Koehler compared these confidence ratings to the confidence ratings of observers, who had merely evaluated decision-makers' answers (without generating their own), he found that decision-makers were less confident than observers that the final answer they provided was correct. This result was traced to differences in experienced decision conflict. Decision-makers had privileged access to all the alternative responses they might have given to the questions, and this lessened their confidence in the ultimate answer they provided. Observers, by contrast, were tasked only with testing the response that decision-makers had given. Because they were less aware of the alternatives that decision-makers had considered, they were more confident in the accuracy of the final answer.

On a slightly different reading, these results could speak to a meta-cognitive account of

self/other differences in free will and exogeneity. Having considered alternative possibilities, decision-makers are more aware of how easily any one decision could have been different. This ease in generating counterfactual possibilities may then be taken as evidence of one's own freedom to have done otherwise (whether this feeling is merely apparent or real). Because observers are, by comparison, less aware of this underlying conflict, final decisions may appear from the outside as more inevitable and predictable than they seem to decision-makers themselves.

**Exogeneity gone wrong? Perverse effects of indecision on preference and choice.**

Whether or not motivated processes play a causal role in people's overestimation of their decision exogeneity, it is clear that people do not take kindly to having their belief in free will challenged. People want to maintain the sense that they have ultimate freedom to actively shape the course of their own lives, and one reason for this is because they feel that such freedom will allow them to lead the lives they want to live (Schwartz, 2000).

With this in mind, the decision-making literature offers a cautionary tale. Just as there may be negative consequences associated with holding unrealistic views of one's own decision exogeneity, perhaps there are unforeseen negative consequences associated with the very meta-cognitive experience that underlies this sense of freedom. Past research suggests that the meta-cognitive experience of indecision may, in some cases, lead to perverse decision-making. That is, injecting decisions with greater uncertainty may cause people to arrive at decisions that they would have otherwise avoided. If so, in at least some cases, people's sense of themselves as exogenous agents may ironically limit their ability to pursue the course of action that is best for them.

In a paper aptly titled “On the Pursuit and Misuse of Useless Information,” Bastardi and Shafir (1998) presented participants with a series of decision scenarios. In one, for example, they asked participants to imagine that they were considering registering for a course with interesting content and an excellent professor. Participants were told that next semester (when they would be enrolling in the course) this professor would be on leave, replaced by a less popular colleague. They were then asked whether, in light of this information, they would enroll in the course or not. Eighty-two percent of participants indicated that they would still enroll.

In a second condition, participants were given the same scenario, except they were told that it was currently unknown whether the popular professor would be instructing the course. These participants were given the option to enroll, not enroll, or wait to find out who would be instructing. Note that for these participants, the worst-case scenario is one in which the popular professor is on leave – the very situation in which participants in the first condition found themselves. Thus, according to a rational choice model, participants' enrollment rates should, if anything, exceed the 82% observed in the first condition. Nonetheless, a full 56% of participants chose to wait, and only 42% of participants jumped at the opportunity to enroll.

What happened with the participants who opted to wait? They were then told that, as it turned out, the professor would be on leave next semester, and were asked whether they would like to enroll in the course. After having waited for the information, participants imbued it with great importance, and as a result made a very different choice than they would have made had they just offered up a decision immediately. Only about half of those who waited ended up deciding to enroll in the course.

Similar work by Van de Ven, Gilovich, and Zeelenberg (2010) suggests that the simple



act of delaying a decision can change the decision that is ultimately made. In their studies, participants were given the choice between two options (say, two investment opportunities). One option was made focal either by instantiating it as the default or by making it the recommendation of an adviser. Participants were then induced either to make their choice immediately or to choose to wait until the end of the study to decide (a third condition was added in which a delay was imposed, rather than chosen). The question was how often people would choose the focal option over its alternative.

Across several studies, participants who opted to delay the decision proved less likely to ultimately choose the focal option than those who made the decision immediately or those who were forced to delay. It is crucial to note that the decision to delay was imposed (subtly) by the experimenters, and was thus independent of participants' idiosyncratic evaluation of the information. In addition, the researchers found that simply priming doubt in participants' minds prior to a decision led them to “attach” that doubt to the focal option, and to choose that option less often. Thus, the mere act of putting off the choice, and the doubt it engenders, changed the decision participants ultimately made, and did so for reasons that had nothing to do with the decision options themselves.

Might the meta-cognitive experience of indecision that is central to people's sense of themselves as exogenous agents produce a similar effect on people's decision-making? In essence, the phenomenology of exogenous agency is one of delayed decision-making – a withholding of a final choice until all the information has been considered. It seems plausible, then, that when faced with a decision for which there is a clear front-runner option, the experience of exogenous agency may predispose people toward decisions they might otherwise

not make. People may be less likely to decide in line with a prevailing course of action, which to themselves and others will make their decisions seem freer and less predictable (Pronin & Kugler, 2010). The irony, of course, is that decisions that go against a prevailing option are no more or less free than decisions that conform to that option, particularly if the decision to reject the front-runner is driven by people misattributing their indecision to the most prominent option.

If this analysis turns out to be true, it raises an additional concern about the consequences of feeling (too) free. To be sure, there will be cases where acting against a prevailing option can unroute people from habitual behaviors and from repeating the same decisions over and over again. In another sense, though, if those prevailing options prevail because they are truly better (as measured by some internal or external standard), then “feeling free” may lead people to act against their best interest, rejecting the very courses of action that might otherwise have contributed to their happiness and well-being.

#### *Conclusion: The agency bias reconsidered*

The literature on self-knowledge and self-prediction has provided numerous demonstrations of an agency bias in people's representations of themselves relative to others. Agentic states, such as aspirations, intentions, goals, and introspective contents, stand at the forefront of people's sense of themselves, but are given comparatively less of a leading role in people's representations of others. Recent work (Helzer & Dunning, 2012) has confirmed that when people apply this asymmetric knowledge toward understanding the future, it leads to systematic patterns of errors and accuracy in self- and social prediction. Because people place too much emphasis upon their own agentic states, and not enough emphasis upon other causal

factors, they reliably overestimate the control they will have to shape future outcomes to their liking. Thus, these predictions prove too optimistic relative to actual future achievement. Peers, because they weight agentic information differently (and more appropriately), largely avoid this overoptimism.

Why is it that people place such emphasis upon their own agentic states even though they recognize the limited predictive power of other people's goals, aspirations, and intentions? The data and theorizing in this paper provide one answer: People see themselves, relative to others, as exogenous agents, whose decisions and behaviors are less subject to extraneous influence. In conceiving uniquely of their choices as active and independent interventions on the world, people are blinded to the role that extraneous forces play in shaping behavior – even if they anticipate the role these forces play in determining the behavior of their peers.

Thus, when people envision themselves in relation to their past and future, the picture looks very different from one that a peer might paint. In looking back, people are less aware than others would be of the extraneous forces that have exerted direct influence on their current states. In looking forward, people attribute greater potency to the causal power of their current agentic states than others would, in part because they once again underestimate just how much of a role extraneous forces will play in determining their future choices, decisions, and behaviors. In seeing themselves uniquely as exogenous agents, people fail to fully grasp the immense causal web that leads them to think, believe, and act the way they do, even though they maintain a more enlightened perspective on the forces that shape the lives of others.

## APPENDIX

*Conformity scenarios from Study 2 (self condition only). Response options have been standardized so that Choice 1 designates the endogenous construal and Choice 2 designates the exogenous construal.*

### Voting decision

It's the day of a local election and you are unfamiliar with the candidates. It's important for you to vote, so you ask a few of your neighbors who they are voting for. You end up voting along with their suggestions.

Which of these is a better description of your behavior:

Choice 1: My neighbors told me who to vote for

Choice 2: I listened to their advice

### Television program

You watch the first episode of a new TV comedy and dislike it. You watch the second episode with friends and find yourself laughing at more of the jokes.

Which of these is a better description of your behavior:

Choice 1: I went along with the group

Choice 2: I found the jokes funnier

### Camera purchase

You are on the market for a new camera. You go to Best Buy, and the sales person shows you the most popular camera (the one most people are buying). You end up buying that model.

Which of these is a better description of your behavior:

Choice 1: I just did what other people did

Choice 2: I made an informed decision

### Whistle-blowing

You see someone cut in line at the grocery store. No one around you seems to be saying anything. You say nothing about it and wait your turn.

Which of these is a better description of your behavior:

Choice 1: I stayed quiet, like everyone else

Choice 2: I decided not to make a scene

### “Green” practice

You go to a hotel, where a sign in the bathroom asks you to help the hotel take care of the environment by reusing your towel. The sign says 70% of guests reuse their towels. For the duration of your stay, you use the same towel.

Which of these is a better description of your behavior:

Choice 1: I followed the hotel norm

Choice 2: I decided to help out

### Money donation

There is a fundraiser happening on in town. Student groups are collecting money for charity. As you walk by the table, you are hounded with requests to give some spare change. You deposit \$0.75 in the box and walk on.

Which of these is a better description of your behavior:

Choice 1: I gave in to pressure

Choice 2: I chose to give money

### Stingy tipping

You are at a restaurant with friends. When the bill comes, your friends comment on how slow the service was and say they're only going to tip 10%. This is lower than you usually tip. You end up tipping 10% to the server.

Which of these is a better description of your behavior:

Choice 1: I just did what my friends did

Choice 2: I decided to lower my tip because of the service

### Going out

It's a Wednesday night and you have to finish a project by the next morning. Your friends want you to go out with them. You end up going out for a few hours that evening then working on your project.

Which of these is a better description of your behavior:

Choice 1: I gave in to peer pressure

Choice 2: I decided to split my time

### Jaywalking

You are waiting at an intersection and the "Do not walk" sign is lit. Nonetheless, there is no traffic, and the person in front of you starts to cross against the light. You cross also.

Which of these is a better description of your behavior:

Choice 1: I did what the person in front of me did

Choice 2: I decided not to wait any longer

### Entree selection

You are going out to dinner. You think you'll order your regular dish, but the waiter says that the evening's special is absolutely delicious. In the end, you decide to order the special.

Which of these is a better description of your behavior:

Choice 1: The waiter changed my mind

Choice 2: I changed my mind

## REFERENCES

- Aarts, H., & Van Den Bos, K. (2011). On the foundations of beliefs in free will: Intentional binding and unconscious priming in self-agency. *Psychological Science*, 22, 532-537
- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs*, 70, (Whole no. 416).
- Balcetis, E., & Dunning, D. (in press). Considering the situation: Why people are better social psychologists than self-psychologists. *Self and Identity*.
- Bastardi, A., & Shafir, E. (1998). On the pursuit and misuse of useless information. *Journal of Personality and Social Psychology*, 75, 19-32.
- Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74, 183-200.
- Bem, D. J., & McConnell, H. K. (1970). Testing the self-perception explanation of dissonance phenomena: On the salience of pre-manipulation attitudes. *Journal of Personality and Social Psychology*, 14, 23-31.
- Buehler, R., Griffin, D., & Ross, M. (1994). Exploring the “planning fallacy”: Why people underestimate their task completion times. *Journal of Personality and Social Psychology*, 67, 366-381.
- Cohen, J., Mutz, D., Price, V., & Gunther, A. (1988). Perceived impact of defamation: An experiment on third-person effects. *Public Opinion Quarterly*, 52, 161-173.
- Critcher, C. R., Helzer, E. G., & Dunning, D. (2010). Self-enhancement via redefinition: Defining social concepts to ensure positive views of self. In M. Alicke & C. Sedikides (Ed.), *Handbook of Self-Enhancement and Self-Protection* (pp. 69-91). New York: The



Guilford Press.

Davison, W. P. (1983). The third-person effect in communication. *Public Opinion Quarterly*, 47, 1-15.

Dennett, D. C. (1984). *Elbow room: The varieties of free will worth wanting*. Cambridge: MIT Press.

Dickens, C. (1843/1986). *A Christmas carol*. New York: Bantam Books.

Douglas, K. M., & Sutton, R. M. (2008). The hidden impact of conspiracy theories: perceived and actual influence of theories surrounding the death of Princess Diana. *Journal of Social Psychology*, 148, 210-221.

Douglas, K. M., & Sutton, R. M. (2010). Right about others, wrong about ourselves? Actual and perceived self-other differences in resistance to persuasion. *British Journal of Social Psychology*, 43, 585-603.

Epley, N., & Dunning, D. (2000). Feeling “holier than thou”: Are self-serving assessments produced by errors in self- or social prediction? *Journal of Personality and Social Psychology*, 79, 861-875.

Fausey, C., Long, B., Inamori, A., & Boroditsky, L. (2010). Constructing agency: the role of language. *Frontiers in Psychology*, doi: 10.3389/fpsyg.2010.00162.

Griffin, D., & Tversky, A. (1992). The weighting of evidence and the determinants of confidence. *Cognitive Psychology*, 24, 411-435.

Gunther, A. C. (1991). What we think others think: Cause and consequence in the third-person effect. *Communications Research*, 18, 355-372.

Hagmayer, Y., & Sloman, S. A. (2009). Decision makers conceive of their choices as

- interventions. *Journal of Experimental Psychology: General*, 138, 22-38.
- Heine, S. J. (2005). Where is the evidence for pan-cultural self-enhancement? A reply to Sedikides, Gaertner, and Toguchi (2003). *Journal of Personality and Social Psychology*, 89, 531-538.
- Heine, S. J., & Hamamura, T. (2007). In search of East Asian self-enhancement. *Personality and Social Psychology Review*, 11, 4-27.
- Helzer, E. G., & Dunning, D. (2012). Why and when peer prediction is superior to self-prediction: The weight given to future aspiration versus past achievement. *Journal of Personality and Social Psychology*, 103, 38-53.
- Helzer, E. G., & Dunning, D. (2012). On motivated reasoning and self-belief. In S. Vazire & T. D. Wilson (Eds.), *Handbook of self-knowledge* (pp. 379-396). New York: Guilford.
- Hoshino-Browne, E., Zanna, A. S., Spencer, S. J., Zanna, M. P., Kitayama, S., & Lackenbauer, S. (2005). On the cultural guises of cognitive dissonance: The case of Easterners and Westerners. *Journal of Personality and Social Psychology*, 89, 294-310.
- Kennedy, K. A., & Pronin, E. (2008). When disagreement gets ugly: Perceptions of bias and the escalation of conflict. *Personality and Social Psychology Bulletin*, 34, 833-848.
- Koehler, D. J. (1994). Hypothesis generation and confidence in judgment. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 20, 461-469.
- Koehler, D. J., & Poon, C. S. K. (2006). Self-predictions overweight the strength of current intentions. *Journal of Experimental Social Psychology*, 42, 517-524.
- Kruger, J., & Gilovich, T. (2004). Actions, intentions, and self-assessment: The road to self-enhancement is paved with good intentions. *Personality and Social Psychology Bulletin*,

30, 328-339.

Kushnir, T., Wellman, H. M., & Gelman, S. A. (2009). A self-agency bias in preschoolers' causal inferences. *Developmental Psychology, 45*, 597-603.

Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology, 32*, 311-328.

Markus, H.R., & Kitayama, S. (2003). Models of agency: Sociocultural diversity in the construction of action. In V. Murphy-Berman & J.J. Berman (Eds.), *Nebraska Symposium on Motivation: Vol. 49*. Cross-cultural differences in perspectives on the self (pp. 1–57). Lincoln: University of Nebraska Press.

Markus, H. R., Uchida, Y., Omoregie, H., Townsend, S. S. M., & Kitayama, S. (2006). Going for the gold: Models of agency in Japanese and American contexts. *Psychological Science, 17*, 103-112.

Milgram, S. (1974). *Obedience to authority*. New York: Harper and Row.

Perloff, R. M. (1989). Ego-involvement and the third-person effect of televised news coverage. *Communication Research, 16*, 236-262.

Perloff, R. M. (1993). Third-person effect research 1983-1992: A review and synthesis. *International Journal of Public Opinion Research, 5*, 167-184.

Perloff, R. M. (1999). The third-person effect: A critical review and synthesis. *Media Psychology, 1*, 353-378.

Prentice, D. A., & Miller, D. T. (1996). Pluralistic ignorance and the perpetuation of social norms by unwitting actors. In M. P. Zanna (Ed.) *Advances in Experimental Social Psychology* (Vol. 28, pp. 161-209). San Diego, CA: Academic Press.

- Preston, J., & Wegner, D. M. (2007). The eureka error: Inadvertent plagiarism by misattributions of effort. *Journal of Personality and Social Psychology*, 92, 575-585.
- Pronin, E. (2009). The introspection illusion. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology*, Vol. 41 (pp. 1-67). Burlington: Academic Press.
- Pronin, E., Berger, J., & Molouki, S. (2007). Alone in a crowd of sheep: Asymmetric perceptions of conformity and their roots in the introspection illusion. *Journal of Personality and Social Psychology*, 92, 585-595.
- Pronin, E., & Kugler, M. B. (2007). Valuing thoughts, ignoring behavior: The introspective illusion as a source of the bias blind spot. *Journal of Experimental Social Psychology*, 43, 565-578.
- Pronin, E., & Kugler, M. B. (2010). People believe they have more free will than others. *Proceedings in the National Academy of Sciences*, 107, 22469-22474.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivations, social development, and well-being. *American Psychologist*, 55, 68-78.
- Savani, K., Marcus, H. R., Naidu, N. V. R., Kumar, S., & Berlia, N. (2010). What counts as choice? U.S. Americans are more likely than Indians to construe actions as choices. *Psychological Science*, 21, 391-398.
- Schwartz, B. (2000). Self-determination: The tyranny of freedom. *American Psychologist*, 55, 79-88.
- Stephens, N. M., Fryberg, S. A., & Markus, H. R. (2011). When choice does not equal freedom: A sociocultural analysis of agency in working-class contexts. *Social and Personality Psychology Science*, 2, 33-41.

- Stephens, N. M., Hamedani, M. G., Markus, H. R., Bergsieker, H. B., & Eloul, L. (2009). Why did they "choose" to stay? Perspectives of the Hurricane Katrina observers and survivors. *Psychological Science, 20*, 878-886.
- Taylor, S. E., Kemeny, M. E., Reed, G. M., Bower, J. E., & Gruenewald, T. L. (2000). Psychological resources, positive illusions, and health. *American Psychologist, 55*, 99-109.
- Thelen, E. (1995). Motor development: A new synthesis. *American Psychologist, 50*, 79-95.
- Van de Ven, N., Gilovich, T., & Zeelenberg, M. (2010). Delay, doubt, and decision: How delaying a choice reduces the appeal of normative options. *Psychological Science, 21*, 568-573.
- Van der Weiden, A., Aarts, H., & Ruys, K. I. (2011). Prime and probability: Causal knowledge affects inferential and predictive effects on self-agency experiences. *Consciousness and Cognition, 20*, 1865-1871
- Vohs, K. D., & Schooler, J. W. (2008). The value of believing in free will: Encouraging a belief in determinism increases cheating. *Psychological Science, 19*, 49-54.
- Wegner, D. M., & Wheatley, T. (1999). Apparent mental causation: Sources of the experience of will. *American Psychologist, 54*, 480-492.
- Williams, E. F., & Gilovich, T. (2008). Conceptions of the self and others across time. *Personality and Social Psychology Bulletin, 34*, 1037-1046.
- Williams, E. F., Gilovich, T., & Dunning, D. (2012). Being all that you can be: The weighting of potential in assessments of self and others. *Personality and Social Psychology Bulletin, 38*, 143-54.