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# When Lady Luck cheats on you

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**When Lady Luck cheats on you**

by

**Omesh Kapoor Johar**

A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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## ABSTRACT

Some people are always better-off than others on desirable characteristics such as attractiveness, wealth, or intelligence. Moreover, such differences can often only be explained by arbitrary factors such as luck. Under these circumstances, how do we judge those favored by luck, particularly when we're not? Do we hold them responsible for their fortune; do we become suspicious of them? I hypothesized that people negatively judge others who benefit from luck, especially when experiencing relative disadvantage. Specifically, others advantaged by luck should be liked less and perceived as less warm by those who did not have the same fortune. Furthermore, this effect on social judgments should hold particularly for individuals who believe in the deterministic power of luck or in luck as a personal characteristic. Prior research offers conflicting predictions about the role of luck in social judgments and ignores the impact of individuals' beliefs in luck. In response, the present research attempted to offer clear and novel insights about the role that perceived luck plays in social judgment. Hypotheses were comprehensively addressed through three studies utilizing both correlational (Study 1) and experimental methods (Studies 2 and 3). Moreover, Study 3 examined whether the hypothesized effect on judgments of warmth reduces inter-personal trust in actual behavior. In general, the results reveal that perceived relative disadvantage predicts less positive social judgments of lucky others and that perceived luck can undermined social judgments of others.

**Keywords:** Luck, Relative Disadvantage, Social Judgments, Social Comparison, Fairness

## INTRODUCTION

*“A meritocracy is a system in which the people who are the luckiest in their health and genetic endowment; luckiest in terms of family support, encouragement, and, probably, income; luckiest in their educational and career opportunities; and luckiest in so many other ways difficult to enumerate -- these are the folks who reap the largest rewards.”*

Ben S. Bernanke, 14<sup>th</sup> Chairman of the Federal Reserve (1953 - )

In his 2013 commencement speech at Princeton University, Bernanke stressed that factors like luck can influence important outcomes even when merit is the criterion. It is almost impossible to find domains in which luck does not have any effect. As luck goes around bestowing advantages, it gives some people an edge over others. In fact, a quick look at the social world reveals many people who are better-off than others just due to luck. We all know others who were born in well-to-do families, were more talented from a very young age, or are naturally more intelligent or better-looking than us. For those who benefit from luck, it can be humbling to realize the role that luck played in their successes. But, more importantly, how do those forgotten by Lady Luck react to those blessed by her charms? I proposed that reactions to such luck-based inferiority have negative consequences on social judgment and co-operative behavior. This proposal builds on past research about dynamics of social judgment and inter-personal comparisons, while offering novel insights about how beliefs about luck color social perceptions and behaviors. Furthermore, it tests to what extent lay concerns and standards about fairness mirror philosophical proposals about the role that luck should play in moral judgment.



## ***Overview***

In the pages that follow, I first review key constructs, namely those of *luck* and *relative disadvantage*. I also discuss important social judgments at the center of my research questions. Second, I point to limitations in existing psychological literature that reveal an ambiguity about how individuals considered to be lucky are viewed by others. Third, to eliminate this ambiguity, I underscore important factors that need consideration in order to illuminate the role of perceived luck in social judgments of others. These factors are the human need for competence, perceptions of fairness, and beliefs in luck. Moreover, I consider philosophical debates on ‘moral luck’, which suggest opposing views on whether fairness (or lack thereof) should impact social judgments of others. Fourth, based on these considerations, I outline the main hypotheses of the proposed research, and present pilot data that offer preliminary support for the hypotheses. Finally, I present data from three studies that test the impact of luck-based inferiority on social judgments by those worse-off of those better-off. In brief, all studies test the hypothesis that our own luck-based inferiority harms our impressions of others better-off and leads us to trust them less.

## ***Key Concepts***

I now define the concepts of luck, relative disadvantage, and luck-based inferiority in more detail. I also specify the aspects of social judgments and interpersonal impressions examined in this research.

### ***1. Luck***

Luck can be good or bad, and can refer to either events or circumstances. Usually, *luck* denotes the uncontrollable or unforeseen side to an event. First, luck can be the

uncontrollable causal *force* that brings about favorable or unfavorable results (Merriam-Webster's online dictionary, n.d.). For instance, winning one casino game after another might constitute being favored by Lady Luck. Second, luck can operate for or against an individual in the form of uncontrollable *circumstances*. For instance, being born in a well-to-do family would exemplify a circumstance tied with good luck. Unless qualified, the word "luck" usually refers to good luck (or fortune).

***Benefitting from Chance vs. Being Lucky.*** It is important to distinguish between chance and luck (Chandler & Spies, 1984; Fischhoff, 1976; Pritchard & Smith, 2004). Chance is considered a property of the environment—a force that is random and unstable. If a person benefits unexpectedly once, people will likely perceive it as an isolated event of chance's making. No attributions might be made to the person who benefited from the random event. Importantly, chance is seen as a mechanism that distributes events fairly and evenly, unaffected by behavior (Keren, 1994).

In contrast to the even-handed but unpredictable role of chance, being *lucky* is seen as a personal attribute. On the surface, the adjective "lucky" merely refers to someone who was able to benefit from luck. However, luck is often viewed as something personally detectable or usable in obtaining advantage (Friedland, 1998; Keren & Wagenaar, 1985). For example, winning one casino game after another can be construed as having personal control over chance-determined events (Langer & Roth, 1975, p. 951). This perceived ability to attract luck could foster internal, stable attributions for good outcomes. Therefore, compared to benefiting from chance once, consistent favorable luck (or luckiness) should have more serious implications for how a person is viewed.

People appropriately acknowledge that they cannot control everything; therefore, chance and luck can play a role. The desire to be lucky suggests that people want to control even the uncontrollable factor of luck. Accordingly, the internet has no dearth of tips on how to become lucky. Some people believe in using lucky charms (Tobacyk & Milford, 1983; Tobacyk, 1988), yet others recommend optimism and recognizing opportunity (Wiseman, 2003). Others believe that being lucky comes from being prepared. As a popular quote goes, “I am a great believer in luck. The harder I work, the more of it I seem to have” (Cox, 1922).

Although chance events often display unexpected streaks, observing consistently favorable events deviates from lay notions of fair and balanced works of chance (Teigen, 1994). Therefore, lucky individuals might not just be seen as merely benefitting from chance. Instead, they might be perceived as playing an active role as an accomplice of luck, achieving what the person judging them is often trying to do him or herself (i.e., get lucky). This is supported by the finding that some people tend to habitually attribute the outcomes of random events to luck instead of chance, and that this tendency is driven by the need for control (Friedland, 1992, 1998). In this vein, the proposed research focused on reactions to individuals who are viewed as “lucky”, i.e., those who seem to systematically benefit from luck and not just randomly benefit from chance.

## ***2. Relative Disadvantage***

Although the key circumstance of interest has been described as luck-based inferiority, it is closer in meaning to *relative disadvantage* than a global sense of inferiority. Relative disadvantage arises when someone’s condition is less favorable compared to another party that is better-off. We all are aware of others who are wealthier,

healthier, or wiser than us. An individual might be smart-enough, attractive enough, or reasonably talented, but the same individual is *relatively* disadvantaged compared to someone who is better-off on any of those domains. Such upward comparison experiences are a ubiquitous aspect of social life (Festinger, 1954; Locke & Nekich, 2000; Wheeler, 2000).

Relative disadvantage is central to the research proposed herein because it has direct implications for the self. The Self-Evaluation Maintenance model (Tesser, 1988, 1991) proposes that people are motivated to maintain positive feelings about the self and that relative disadvantage in important domains will often undermine such feelings, creating negative affect and motivations to restore one's sense of competence. The strategies for preserving a positive sense of self can include avoiding the comparisons, distorting their meaning, or derogating and sabotaging the comparison target (Brickman & Bullman, 1977; Morse & Gergen, 1970; Smith, 2000; Tesser & Smith, 1980; Wills, 1981; Wood, 1989).

More generally, activation of the self typically increases social comparison tendencies and can direct focusing of attention on others (Muller & Butera, 2007; Stapel & Tesser, 2001). Moreover, activation of the self can yield stronger affective reactions to fair and unfair personal events (Van den Bos, Miedema, Vermunt, & Zwenk, 2011). Therefore, advantages of others that highlight our own important deficiencies present a much more important context for examining judgments of those advantaged by luck than do situations that have no implications for the self. In this vein, relative disadvantage received close scrutiny in this investigation.

### ***3. Luck-Based Inferiority***

There are plenty of examples of social disparities that can only be attributed to luck. It is far from clear why some people are born in well-to-do families, or why some people are more talented from a very young age. To the extent that intelligence or looks are attributable to genes, one can infer an inherent randomness in how they are bestowed. Similarly, it might seem completely arbitrary that some people receive the right opportunities or breaks while others continue to miss them. For instance, every year 50,000 aspiring immigrants are granted citizenship of the United States of America through a lottery, while others' hopes are dashed (Jeffreys, 2005). Similarly, some students' familial legacies virtually ensure them admission to elite colleges and universities, while other competent students do not ever make the cut (Hurwitz, 2011).

The questions about luck-based inferiority raised so far point to three different scenarios illustrated across the three cells in Figure 1. All the cells describe awareness of a target individual who enjoys a favorable outcome/circumstance. The favorable outcome is attributable to luck in cells A and C, but not in cell B. The favorable outcome puts an observer at a relative disadvantage in cells A and B, but not in cell C. Note that the highlighted cell A exemplifies luck-based inferiority. Comparisons of social judgments about target individuals in cell A with judgments of those in cells B and C will enable us to address questions about the unique roles of luck and inferiority, respectively.

	Luck present	Luck absent
Inferiority present	A	B
No inferiority	C	

*Figure 1.* Schematic representation of social circumstances underlying luck-based inferiority.

***Understanding Luck-Based Inferiority.*** The main emphasis of this research is on interpersonal consequences of luck-based inferiority; specifically, on the kinds of social judgments we form of those who are better-off than us just due to luck. These judgments are described in more detail below.

***Social Judgments.*** The first social judgment of interest is *liking*. Many consider liking to be an automatic association that underlies all social contact (e.g., Cacioppo, Gardner, & Berntson, 1997). Liking captures a general positive attitude toward a target. Apart from liking, another key judgment in this work was perceived warmth. Warmth, along with competence, has been identified as one of two basic dimensions of person and group perception (Fiske, Cuddy, & Glick, 2007; Judd, Hawkins, Yzerbyt, & Kashima, 2005; Fiske, Cuddy, Glick & Xu, 2002). The *warmth* dimension captures traits like friendliness, helpfulness, sincerity, trustworthiness and morality, whereas the *competence* dimension reflects traits like intelligence, skill, creativity and efficacy (Fiske et al., 2007). Thus, warmth denotes perceived intentions whereas competence denotes perceived ability to carry out those intentions. These two dimensions account for an impressive 82% of the variance in perceptions of everyday social behaviors (Wojciszke, Bazinska, & Jaworski, 1998). More importantly, the placement of a person or a group along the warmth (along

with competence) dimension shapes emotional reactions and directs behaviors toward such a target (e.g., Cuddy, Fiske, & Glick, 2008). Perceptions of liking and warmth, therefore, provide a meaningful way to study interpersonal consequences toward beneficiaries of luck. Here onwards, the term ‘social judgments’ will refer specifically to judgments of liking and perceived warmth.

### ***Limitations in Previous Psychological Research***

Unfortunately, existing psychological literature does not provide clear answers about social judgments under luck-based inferiority. Two domains of work touch on the question of interest, but provide conflicting implications. The first domain involves studies which show that observing others benefit from luck elicits positive impressions of them. This *Luck-Preference* domain suggests that social judgments of lucky individuals will be positive, embodying liking and trust. The second domain comprises research on negative emotional reactions and judgments under relative disadvantage. As discussed below, this *Envy* domain suggests that social judgments of others (advantaged by luck) will be negative, marked by hostility and distrust. In sum, luck and relative disadvantage have been studied separately, leading to contradictory implications about interpersonal consequences of luck-based disparities. I now review these distinct domains of research and suggest ways to reconcile their findings in order to achieve a clear understanding about the impact of luck-based inferiority on social judgment.

#### ***1. The Luck-Preference Domain.***

This domain constitutes a smaller number of studies that very closely address the issue of luck and judgments of those who benefit from it. In one such study, children were read vignettes describing other children who benefited from, or were victims of,

uncontrollable events (Olson, Banaji, Dweck, & Spelke, 2006). Children liked those who benefitted from uncontrollable events more than those who were victims. Another study showed that children expect that beneficiaries (vs. victims) of uncontrollable events are more likely to perform good actions (Study 1; Olson, Dunham, Dweck, Spelke & Banaji, 2008). In other studies from the same research, the researchers showed that children believe that beneficiaries of uncontrollable events are nicer people. Adults also demonstrated more liking for individuals who benefitted from random good vs. bad events (Experiment 13; Olson, 2008). Thus, there is reason to believe that adults and children alike have a preference for people who benefit from chance or, are “lucky”. Olson and colleagues (2008) also showed that children associate “lucky” children with good intentions and “unlucky” children with bad intentions. For example, it was found that lucky children were believed to be less likely to get into a fight and more likely to share their toys. These authors thus labeled this phenomenon “luck preference”.

However, several factors prohibit generalization of this apparent preference for the lucky to circumstances of luck-based inferiority or even to perceptions of lucky others more broadly. First, Olson and colleagues (2006, 2008) did not examine the role that judge’s disadvantages played in social judgments. None of the vignettes used in the studies put the participants at a relative disadvantage or were in any way self-relevant. In terms of situations represented in Figure 1, the “luck preference” studies only looked at the role of luck in the “no inferiority” level (Cell C). The researchers compared reactions toward targets that enjoyed favorable vs. unfavorable outcomes, without the target putting the observer at a relative disadvantage.



Second, what should one make of the finding that lucky targets elicited positive social judgments in these studies? As discussed earlier, people want to be lucky, and they want to be able to attract good luck. It is possible that the desire to be lucky oneself can elicit feelings of admiration when faced with a lucky individual. Thus, when good events happen to others with no implications for the self, it should be no surprise that people react positively (Cialdini & Richardson, 1980; Tesser, 1988). However, it is questionable whether people would react positively when comparatively disadvantaged by luck. Thus, studies that demonstrate “luck preference” leave much to be desired when it comes to understanding perceptions of lucky individuals in the context of social comparison. Moreover, these studies did not address behavioral consequences of perceiving others as lucky.

Third, Olson and colleagues did not examine how people who *consistently* get lucky (i.e., those favored by “Lady Luck”) are perceived. Vignettes used in their studies only focused on targets that had one lucky or unlucky event happen to them. Given that a single lucky event might be seen as the making of chance instead of luck, findings of Olson and colleagues likely demonstrate perceptions of those who benefit from “chance” instead of luck. Although “lucky” individuals in the studies were perceived favorably, it is not clear whether those who consistently benefit from luck will also be perceived similarly. When a person seems to get lucky all the time, tables might be turned.

## ***2. The Envy Domain.***

An alternative perspective emerges from research on social comparison, relative disadvantage, and envy, neither of which explicitly considers the effect of luck. This perspective relies on findings that link relative disadvantage with negative emotions.

When the relative disadvantage is perceived as unfair (likening it to relative deprivation), anger and resentment are its essential affective consequences (Crosby, 1976; Folger, 1987; Martin, 1986; Runciman, 1966; Walker & Pettigrew, 1984). More generally, upward social comparisons often lead to envy, hostility, and occasional gloating at others' misery when others' advantage is beyond our grasp (Krizan & Johar, 2012; Krizan & Smith, 2014; Leach & Spears, 2008; Smith & Kim, 2007; Smith, Turner, Leach, Garonzik, Urch-Druskat, & Weston, 1996; Van de Ven, Zeelenberg, & Pieters, 2009). Thus, it can be argued that the relatively advantaged individual would not be liked amidst negative emotions like envy and resentment (but see Feather and Sherman, 2002). Consistent with this reasoning, in a field study bank employees disliked co-workers who were promoted, seemingly due to envy (Schaubroeck and Lam, 2004). Similarly, relatively advantaged groups (e.g., wall-street brokers) often become associated with ill-intentions, given envied groups and individuals are generally perceived as competent but cold and untrustworthy (Fiske et al., 2007). Thus, those better-off might not only be disliked, but specifically perceived as less moral and ethical (i.e., warm).

However, research on envy and resentment does not allow isolating the role of luck within the context of relative disadvantage, given that the process by which disadvantage is created is not typically manipulated. Studies that did pay attention to the process of allocation either involved other confounds like the lack of effort (e.g., Feather & Sherman, 2002), or did not explicitly manipulate the process of allocation (e.g., Cohen-Charash & Mueller, 2007). In this latter study, participants recalled a person who was better than them and provided ratings of envy and fairness in that situation (Cohen-Charash & Mueller, 2007 Study 1). Counterproductive work behaviors (loafing,

sabotage) were found to be more strongly related to envy when greater unfairness was perceived.

Thus, past research does not help to fully understand the role that perceived luck plays in social judgments within contexts of relative disadvantage. In terms of situations represented in Figure 1, research relevant to the envy domain seems to generally compare cell C with cells A and B combined. In order to isolate the role of luck it is important to contrast two targets of comparison in the same circumstances, with the exception of the role of luck in creating those circumstances (i.e., contrast cell A with B). Regardless, the research in this domain suggests that others who are advantaged by sheer luck might receive the wrath of resentful and envious reactions, undermining liking, perceived warmth, and trust.

In sum, the extant literature does not offer a clear conclusion about the role of luck in shaping social judgments under relative disadvantage. Not only is it not clear whether reactions will be positive or negative, it is also unclear how differences in luck (not chance) affect social judgments of those better-off. The current research addressed these theoretical and empirical gaps in three studies. First, I focused on reactions to individuals explicitly viewed as benefiting from *luck* as opposed to chance. Second, to examine the unique role of luck in social judgments, Study 2 compared people's reactions to advantaged individuals who only differed in the extent to which luck was responsible for their advantage (cell A vs. B, Figure 1). Third, to examine the role of self-relevance, Study 3 compared reactions toward lucky individuals who differ in the extent to which their outcomes put an observer at a disadvantage (cell A vs. C, Figure 1). Specifically,

peoples' reactions to two lucky individuals were compared, whereby only the success of one was (relatively) disadvantageous for the observer.

### ***Routes from Luck-Based Inferiority to Social Judgments***

In order to better understand people's reactions to others advantaged by luck, three important factors need to be considered. In this section, I discuss these factors: the need for competence, perceived unfairness, and beliefs in luck. Each of these factors contributes to understanding inter-personal consequences of luck-based inferiority, and I will underscore implications of each.

#### ***1. Need for Competence***

Earlier I argued that luck-based inferiority should have a potent effect on people when the self is involved. One way in which this can happen is through impact on human need satisfaction (Leary & Baumeister, 2000; Sheldon, Elliot, Kim, & Kassser, 2001; Tesser, 1988). The need most relevant here is the need for competence, identified as a core psychological need by multiple theorists (e.g., Bandura, 1977; Deci & Ryan, 2000; White, 1959). Competence refers to the ability to have an effect on the environment and to attain valued outcomes within it. Moreover, psychosocial experiences of mastery and effectance are crucial to happiness and well-being (as described in self-determination theory; Deci & Ryan, 2000).

Luck-based differences restrict the experience of competence in at least two ways. First, superiority of someone means that one is less competent, at least in the domain of comparison (Johar & Krizan, 2014; White, 1959). For instance, a smarter colleague might pose tough competition, thus having implications for one's career prospects and self-perceptions of ability. Second, luck thwarts the sense of control because it is not clear

how one might improve one's standing (given that luck should be uncontrollable by definition). Thus, someone who is better due to luck might be perceived as a double threat to one's need for competence and should therefore elicit negative social judgments and emotional reactions (Abramson, Seligman, & Teasdale, 1978; Brickman & Bulman, 1977; Morse & Gergen, 1970; Weiner, 1986).

However, there is not enough existing evidence to conclude that luck-based inferiority necessarily thwarts the need for competence. Although it makes sense that role of luck in another person's advantage can thwart one's need for competence, the perceived luck could also absolve oneself from responsibility for one's inferiority (e.g., "It's not about me if I can't control it"). In this case, luck might actually *help* regain the undermined sense of control. If so, negative reactions toward the lucky individual might not arise. Given such contradicting possibilities, the proposed research on the effect of luck-based inferiority on social judgment is that much more necessary.

## ***2. Perceptions of Fairness***

Another important underlying factor in social judgments under inequality is justice or fairness (the terms will be used interchangeably). It cannot be overemphasized that people's views about what is just or fair are a social facilitator through which the interaction among people and groups is enabled (Tyler, 2000). That one person has more due to luck is essentially a problem of distribution of resources. An important question then is can we identify what is unfair about Lady Luck's kindness toward one person over another? Another related issue is that of "moral luck". Even if we label a situation as unfair (or wrong), is it justified to form a moral judgment of people who happen to be in that situation? I next discuss both questions in detail.

***Unfairness of luck-based inequalities.*** Does good luck (or a lucky individual) violate any code of fairness or justice, and if so, which one? To facilitate the discussion, I describe two aspects of fairness: *distributive* and *procedural* fairness. Distributive fairness deals with outcomes: who gets how much? Procedural fairness deals with underlying decision making procedures: how was it determined who should get what? It is important to distinguish between procedural and distributive fairness because fairness concerns of people involve questions about procedures through which outcomes are obtained, as well as the outcomes themselves (Thibaut & Walker, 1975).

Different principles or standards can be employed to determine fairness. For example, distributive fairness is reflected by norms for equality (Forsyth, 2006). It is important that every individual gets the same outcome (e.g., equal pay for equal work, see Rawls, 1971). If any individual gets less or more, then equality would be violated and outcomes would be considered unfair in a distributional sense. Procedural fairness, on the other hand, reflects the nature of procedures—whether everyone has an opportunity for input in the decision-making process. For example, if people do not get *voice*, procedural fairness is compromised and people are less satisfied with their outcomes (Van den Bos, 2007). In many cases, what is ultimately judged as fair can be a complex combination of distributive and procedural fairness.

***Luck egalitarianism.*** Critically, luck-based inferiority is not amenable to any simple standard of fairness. On the one hand, luck is uncontrollable and should thus absolve the person benefiting from it from any moral judgment. On the other hand, luck could be seen to violate both distributive fairness (due to unequal outcomes) and procedural fairness (given the arbitrariness of the allocation). Therefore, a more complex

standard of fairness may be needed to better understand the perceptions of unfairness under luck-based inferiority. The principle of *luck egalitarianism* is one such standard of fairness most relevant to the current research. It can help to illustrate exactly what kinds of moral codes are violated when luck favors one individual over another.

The following quote sums up the essence of luck egalitarianism: “There is injustice in distribution when the inequality of goods reflects not such things as differences in the arduousness of different people’s labors, or people’s different preferences and choices with respect to income and leisure, but myriad forms of lucky and unlucky circumstance” (Cohen 2000, p. 130). Therefore, as per luck egalitarianism, differences among people are unfair if those differences result not from peoples’ choices and effort, but from forces beyond their control. Achieving luck egalitarianism can also be understood as one of the goals of distributive justice (Arneson 1989, 2000; Cohen 1989; Dworkin 2003). For example, someone who is naturally better-looking than me did nothing to obtain the advantage which is just handed down by genes. To the extent that I believe in luck egalitarianism, I would take issue with the unfair distribution of good looks.

In sum, the fact that distribution of resources (in the above example, attractiveness) is governed by luck might be construed as a violation of the standard of justice prescribed by the principle of luck egalitarianism. It is noteworthy that there is no direct empirical evidence regarding whether people actually accept this way of thinking or behave as luck egalitarians in their daily lives. In other words, it is unclear whether people use the principle of luck egalitarianism to judge fairness of everyday situations. The proposed research speaks directly to this issue.

***Moral luck.*** Equally relevant is the question philosophers have grappled with for centuries: should a person be evaluated based on an action, event, or circumstance even though the action is not within the actor's own control (Nagel, 1979; Williams, 1981)? This debate on "moral luck" is far from being settled. Let us take the classic example of two law-abiding drivers (A and B). One of the drivers (A) was met with an unforeseen situation—a child came running in front of the car. Despite all efforts to avoid hitting the child, driver A could not prevent it. Driver B faced no tragic event. Although driver A is not responsible for hitting the child, the child did get hit when A was driving. Do we judge A as less moral than B? Legal implications of hitting a child suggest that as a society we do judge driver A as less moral (Zipursky, 2008). Whether it is justified to do so or not remains debatable.

***Culpability in Moral Luck.*** A similar situation arises under conditions of luck-based inferiority. The principle of luck egalitarianism suggests that luck-based differences are a violation of fairness. Although lucky individuals themselves might not have perpetrated the violation of luck egalitarianism, if it were not for them, the luck-based inferiority would clearly not manifest. It remains an open question whether lucky individuals are themselves to blame (as in the case of the *unlucky* driver). The philosophical debate on 'moral luck' focuses exactly on the question: should people be judged for (wrong) actions that they are not themselves responsible for. Importantly, analyses of 'moral luck' suggest the possibility that an advantaged lucky individual is held responsible for the good luck (as a violator of luck egalitarianism). The current research empirically addressed this question.



In sum, do people hold actors responsible for actions that were not under their control, specifically in the context of luck-based inferiority? If so, people would judge the lucky individuals as less warm and like them less. In a sense, people may end up blaming the lucky individuals for their luck. One underlying mechanism might involve judgments of deservingness. Feather (1999) argued that reactions to others' success or failure depend on the degree to which outcomes are seen as deserved, that is whether they co-exist with good behavior, effort, or intentions. Advantages contingent largely on luck would thus seem to render the lucky individual undeserving. Accordingly, negative reactions should follow (Feather & Sherman, 2002). Another mechanism that should link violation of fairness with negative impressions of individuals in unfair situations is evaluative conditioning. Evaluative conditioning is a specific type of associative learning where neutral stimuli become valenced simply by their association with another valenced object, face, taste or scent, after as little as one instance of association (Hofmann, De Houwer, Perugini, & Baeyens, 2010; Soderberg & Sherman, 2013; Todd & Burgmer, 2013; for a review see DeHouwer, Thomas, & Baeyens, 2001). So, perceptions of the lucky individual—even if a neutral stimulus to begin with—might become colored by the way the situation is perceived, i.e., as unjust and unfair.

### ***3. Beliefs in Luck.***

Individual differences in beliefs about luck suggest that not all people would interpret luck-based inequality in the same way. Therefore, considering the nature of peoples' beliefs about luck is crucial when trying to understand reactions to luck-based inferiority. Factor analyses of lay beliefs point to at least two distinct aspects of peoples' beliefs in luck (André, 2006; Bridgstock, Marais, & Sturgess, 2011; Darke & Freedman,

1997a & b; Day & Maltby, 2003; Maltby, Day, Gill, Colley, & Wood, 2008; Thompson & Prendergast, 2012). The first is a general belief in luck, i.e., whether individuals believe in the existence of luck as a deterministic phenomenon (Thompson & Prendergast, 2012). The second is personal luckiness, i.e., the extent to which people believe that they themselves have deterministic luck or the ability to detect and direct the uncontrollable force that luck is supposed to be (Maltby et al., 2008; Thompson & Prendergast, 2012).

When considering how people react to luck-based inferiority, beliefs in luck likely play a key role. People who do not believe in the deterministic capacity of luck might not attribute their relative disadvantage to luck. Such people might conclude that the seemingly lucky individual deserved the advantage for some reason, or that the lucky person was an unintended beneficiary of pure chance. Consequently, they might not see the lucky individual in a negative light. However, there is no empirical evidence regarding consequences of such beliefs about luck. In addition, the potential belief in one's own personal luckiness suggests another painful social comparison. In this situation the inferior individual might also feel additionally short-changed for being personally less lucky, in addition to lacking the desired outcome that the lucky individual enjoys. This might strengthen the sense of inferiority and the associated emotional reactions, as discussed above.

The above considerations are key to understanding the role that luck-based inferiority plays in social judgments of lucky individuals. Importantly, they suggest two distinct possibilities: luck-based inferiority may lead to negative social judgments and interpersonal consequences, or may have little or no impact given luck is a factor external

to an individual. The extant empirical research literature also points toward these conflicting possibilities, but it tends to be limited in research design and the ability to accurately predict reactions to luck-based inferiority.

### ***Hypotheses***

***Overview.*** In an attempt to resolve conflicting possibilities posed by past research, I used a more systematic way of understanding social judgments under conditions of luck-based inferiority. In general, I hypothesized that relative disadvantage of the observer is central to how people react to luck-based inequality. Specifically, perceived relative disadvantage and the perceived role of luck in another's advantage should *negatively* affect social judgments of that individual. These predictions stem from a premise that reactions to luck-based inferiority are influenced by a thwarted need for competence, lay beliefs in luck egalitarianism, and negative associations regarding others within unfair situations. Although luck (in another's advantage) should undermine competence and activate fairness concerns more generally, these effects should be strengthened by one's own self-relevant disadvantage. Finally, beliefs in luck are expected to augment these reactions. Lack of belief in luck should allow people to dismiss the role of luck in luck-based inferiority. Conversely, stronger beliefs in luck or personal luckiness should lead to less positive social judgments.

***The Role of Relative Disadvantage.*** The role of relative disadvantage (and self-relevance) is central to this inquiry. Two hypotheses address the role of relative disadvantage in luck-based inferiority. These hypotheses are based on the heightened involvement of self under relative disadvantage. Self-involvement orients one toward social comparison and toward deeper processing of the implications thereof. When luck-

based differences lead to relative disadvantage, people should experience a stronger thwarting of the need for competence and the inequality would be perceived as a violation of fairness. First, I hypothesized that lucky individuals would be *liked* less when they are relatively advantaged. I also hypothesized that these lucky individuals would be perceived as *less warm*. Although these two hypotheses were experimentally examined only in Study 3, they were also explored in Studies 1 and 2.

***The Role of Luck.*** The next two hypotheses address the unique role of luck in social judgments. First, I hypothesized that people who view luck itself as responsible for the success of advantaged individuals would be especially likely to *like less* those benefiting from it. Second, I hypothesized that people who view luck itself as responsible for the success of advantaged individuals would also be especially likely to perceive those who benefit from luck as *less warm* and having ill intentions (i.e., being less moral, ethical, or trustworthy).

Hypotheses about the role of luck provided an empirical test of the propositions regarding ‘moral luck’. I proposed that agents should be judged for outcomes associated with them despite a lack of objective agency or formal responsibility. In keeping with the principle of luck egalitarianism, it is unjust that some people benefit merely due to luck. Thus, the situation (luck-based disparity) might come to be perceived as unfair. As discussed before, perceptions of un-deservingness and evaluative conditioning should undermine social judgments of lucky individuals.

***Beliefs about luck.*** The hypotheses discussed so far are based on the assumption that people are able to attribute circumstances of lucky individuals to luck itself. However, not all believe in the deterministic power of luck, nor to the same degree

(Thompson & Prendergast, 2012; Friedland, 1998). Those with strong beliefs in luck should pay more attention to the role played by luck in the lives of lucky individuals. Also, those with weak beliefs in luck might attribute outcomes to chance instead of luck. Accordingly, the effect of luck on the way lucky individuals are perceived might be even stronger as beliefs in luck become stronger. Therefore, I hypothesized a complex effect of beliefs in luck. Stronger general beliefs in luck should predict stronger attributions to luck, which in turn should be negatively associated with social judgments. In this vein, I hypothesized that the effect of belief in luck will be mediated by attributions to luck.

### ***Study Overview***

I now describe three studies that will address the above hypotheses in various settings. In each study participants reported attributions of the outcomes of another individual to luck. Each study focused on a different aspect of the link between luck and social judgments (of liking and perceived warmth). Study 1 examined the extent to which perceived luck predicts reactions toward actual lucky individuals in participants' lives. Participants reported what they thought of real individuals from their lives, those who benefitted from luck. In Study 2, the role of luck in shaping reactions to the advantaged was experimentally isolated. Participants read about a relatively advantaged individual who either benefited from luck or not.

Study 3 explicitly tested the role of self-relevance in luck-based inferiority. Participants observed a confederate repeatedly win a luck-game, thus creating the impressions of luckiness. Relative disadvantage of the participant was experimentally manipulated by allowing the participant to first play and lose the same game or making the participant a neutral observer. Thus, good outcomes of the lucky individual should or

should not create a direct comparative disadvantage, contingent on the role of the participant (observer vs. loser). In addition, Study 3 assessed potential consequences of lower perceived warmth through a behavioral measure of trust. Specifically, participants were led to believe that they had the opportunity to share some money with the winning confederate, with the expectation of a return. The more money they shared, the bigger return they could expect. Participants would not share bigger amounts unless they trust the intentions of the confederate. This behavioral measure allowed examining whether the effects of perceived luck in others' advantage can be generalized to behavior reflecting trust in another. Thus, Study 3 went beyond self-reported reactions toward the lucky individual as it assessed actual inter-personal behavior.

### ***Pilot Data***

Data from two pilot studies provided preliminary support for the hypothesis that attributing others' success to luck leads to negative impressions and lower trust. In the first pilot study, two-hundred and fifty four student participants imagined a summer internship wherein they worked in supervised same-sex pairs. They also imagined that at the end of the internship all employees received bonuses. Despite equal performance, the teammate received a bigger bonus than the participant. Participants reported the extent to which (they thought) the bigger bonus of the teammate was attributable to luck. Participants also rated how much they liked the teammate and perceived the teammate as warm. Attributions to luck were negatively correlated with both liking and perceived warmth ( $r$ 's = -.16, -.19, respectively,  $p$ 's < .05).

In the second pilot study, ninety-five participants read news articles about a successful businessman, a female super-model, and a high-status student peer at their

university. Participants then rated the degree to which success of different target individuals was attributable to luck, and also reported the extent to which they liked the persons and perceived them as warm. Attributions to luck were negatively correlated with perceived warmth in all three cases ( $r$ 's = -.30,  $p$ 's < .01). Although correlations with liking were negative, they did not reach significance (the correlation in the case of the high-status student peer was -.10). Thus, both pilot studies suggested that attributions to luck are linked to negative social judgments, specifically to lower liking and perceived warmth.

## PART I. THE LUCKY ONES IN OUR LIVES

Although it is intuitive that people pay attention to the role of luck in the lives of people they know, it was important to test this assumption empirically. Therefore, I started by examining people's encounters with lucky individuals in their day-to-day life. Participants recalled individuals who they considered especially lucky. Participants briefly described this person's life. Subsequently, participants answered questions about both the lucky individual and themselves. Thus, Study 1 allowed examining whether luck colors perceptions of people in real life.

### *Method*

**Participants.** A hundred and sixty-two students (66% female, mean age 19.2 years) from a large Midwestern university completed the study in exchange for partial course credit. Ten participants failed to describe any person known to them, suggesting potentially flippant responses. Additionally, three participants said that they did not know anybody who they would consider to be "lucky". Accordingly, these participants were dropped from the analysis. Thus, the total sample size was a hundred and forty-nine. This allowed sufficient power (80%) to detect even a modest correlation of .25 (Cohen, 1988).

**Procedures & Measures.** All procedures were completed online. Participants read provided the following prompt:

*"Often uncontrolled and unforeseen factors shape our lives, getting in our way or helping us along. Think of someone you know whose path rarely seems to be hindered by unpredictable factors, that is, someone who seems to have things often go their way due to forces external to them. After you have identified such a person in your social circle, please take a moment to reflect on them and your experiences with them. In the space*



*below, please describe this person and highlight some examples of favorable outcomes they experienced or ways in which they benefited from external factors. Also, please describe what you think about this person and whether you have an actual relationship.”*

*Questions about the lucky individual.* Subsequently, participants completed several questionnaires. They reported the duration for which they had known the lucky individual. They classified their relationship with that individual (e.g., stranger, acquaintance, friend, sibling, parent, etc.). Next, they rated their emotional reactions (see Appendix A) toward this individual on a scale of 0 (not at all) to 11 (a great amount), e.g., *liking for, angry at, envious of, pleased for*, etc. To measure the feeling of relative disadvantage responses to emotional reactions such as *depressed, self-lacking, inferior to, ashamed of yourself* were aggregated into a dejection index. Subsequently, participants made attributions of the lucky individual’s collective outcomes to luck on a scale of 1 (Not At All) to 5 (Very Much). I will use the term luck-attribution to refer to this measure.

In the final questionnaire about the lucky individual, participants rated personality impressions regarding that individual on a scale of 0 (Not At All) to 11 (A Great Amount) e.g., “likeable”, “arrogant”, “selfish”, etc. Responses to two items were aggregated to measure liking: “liking for” and “likeable” (both measured on a scale of 0 to 11). Perceived warmth was measured as an aggregate of the following personality impression ratings, namely *arrogant, selfish, friendly, genuine, trustworthy, self-centered, conceited, dishonest, and moral*. Negatively-valenced items were reverse coded.

*Luck-Belief Scales.* I use the term “luck-belief scales” to refer to different scales used to measure beliefs related to luck (Appendix D). Among these scales were the belief

in luck and luckiness scale (BILLS; Thompson & Prendergast, 2012), the belief in good luck scale (BIGL; Darke, 1997) and the Darke and Freedman beliefs around luck scale (DFBALS; Maltby, et al., 2008). The BILLS (five-points; 1=Strongly Disagree, 5=Strongly Agree) includes a *general belief-in-luck* subscale, which measures the extent to which people believe that *luck* can influence outcomes in peoples' lives, e.g., "I believe in good and bad luck", "There is no such thing as good or bad luck", "Good and bad luck really do exist", "Luck doesn't affect what happens to me", "Belief in luck is completely sensible", and, "Luck only exists in peoples' minds". The BILLS also contains a *beliefs in personal luckiness* subscale, e.g., "I mostly have bad luck", "I'm not lucky", "I generally have good luck", "I consider myself a lucky person", "Bad luck happens to me often", and "I'm usually lucky". Negatively worded items will be reverse coded.

The BIGL (six-points; 1=Strongly Disagree, 6=Strongly Agree) measures individual differences in the irrational view of luck as a stable force, which can influence events in one's favor. This scale contains items such as "I consistently have good luck" and "Luck works in my favor". The DFBALS (six-points; 1=Strongly Disagree, 6=Strongly Agree) scale has four subscales, namely *general-belief-in-luck* (e.g., "Some people are consistently lucky, and others are unlucky"), *rejection-of-beliefs-in-luck* (e.g., "Being unlucky is nothing more than random"), *belief-in-being-lucky* (e.g., "I consistently have good luck"), and *belief-in-being-unlucky* (e.g., "I consistently have bad luck").

Thus, the three luck-belief scales comprised seven scores (one score for each subscale). In order to extract belief-in-luck and personal luckiness factors from the

measures of luck-related beliefs, I conducted a principal-factors analysis (with oblimin rotation) on the seven measures of luck-related beliefs with the aim of extracting two correlated belief factors. The analysis revealed two factors with an eigenvalue greater than one (accounting for 31% and 28% of the variance after rotation) and scree-plot as well as parallel analysis supported a two-factor solution (Horn, 1965). The factor loadings from the pattern matrix (controlling for factor dependence) are shown in Table 1 and represent the two factors of general belief-in-luck and belief in personal luckiness (which correlated .02). Examining factor loadings confirms that belief in the deterministic power of luck is separate from the belief in personal luckiness and supports the work of Thompson and Prendergast (2012). Critically, I derived factor scores corresponding to two factors from the luck-belief scales. These factor scores were then linked to social judgments.

### ***Results***

***Characteristics of the Lucky Individuals.*** On average, participants had known the lucky individuals for eight years and eleven months (ranging from zero months to twenty-one years and one month). Roughly 39 percent of the lucky individuals were classified as close friends, 20 percent as friends, 10 percent as siblings, and 10 percent as acquaintances. The remaining fourteen percent were classified as members of one's extended family, parents, romantic partners, or strangers.

Descriptions of lucky individuals contained a wealth of interesting information. One rater read and classified all the descriptions. The rater assessed whether a participant described feeling relatively disadvantaged compared to the lucky individual.

Furthermore, the rater classified the kinds of advantage and the relationship with the lucky individual in the description.

*Advantages Enjoyed by the Lucky Individuals.* The advantage enjoyed by the lucky individual was classified via the coding system used successfully by Krizan and Johar (2012) to identify distinct real-life comparison domains. Roughly 44 percent had good achievements (e.g., grades, finding a job), 30 percent of the individuals enjoyed some ability (e.g., intelligence, artistic talent, athletic ability), 22 percent enjoyed a desirable personality trait (e.g., friendliness, emotional stability) and nineteen percent enjoyed good financial background (e.g., family wealth). Those noted for physical attractiveness, coveted possessions (e.g., car, house), or having good relationships (e.g., closeness with parents, romantic partner) each constituted roughly eight percent. Finally, about 20 percent enjoyed some unlikely experiences (e.g., winning money at casinos, winning last-minute tickets to a concert, etc.). The total percentage is greater than hundred because many individuals were described as having multiple advantages. The following is a description provided by one participant:

*My friend ... seems to have a pretty easy life. Things just kind of click for her. Last year, she moved to a new town, found a new job and a new boyfriend, and found a new circle of friends, all within the span of a few months. She didn't seem to try too hard -- it all just seemed to happen for her. Her financial situation is great - she found a good job after not a lot of searching, and lives in a really nice place and drives a really nice car. The thing is, I don't feel like she's had to deal with any struggles at all. I attempted to do the same thing this year (moving to a new town, starting a new life, etc.) and it has been a pretty awful experience. Everything seems*

TABLE 1. Factor Loadings of Luck-Belief scales and subscales

	Study 1		Study 2		Study 3	
	Factor1 Deterministic luck	Factor2 Personal luck	Factor1 Deterministic luck	Factor2 Personal luck	Factor1 Deterministic luck	Factor2 Personal luck
<b>BILLS</b>						
Belief-in-luck	.61	-.10	.68	-.16	.66	-.22
Belief in personal luckiness	-.27	.94	.13	.91	.09	.88
<b>BIGL</b>	.67	.59	.98	.11	.98	.13
<b>DFBALS</b>						
Unlucky	.64	-.40	.27	-.73	.13	-.78
Lucky	.36	.73	.60	.35	.58	.50
Reject	-.03	-.15	-.48	.01	-.50	.08
General	.86	.03	.78	-.22	.67	-.41
Variance explained (%)	31	28	39	23	35	27

Note. The coefficients represent unique factor loadings from a Principal Factors Analysis with Oblimin rotation

*to be acting against me - my job is awful, I don't have any friends, etc. I don't understand why it was so easy for her, but it's so difficult for me.*

Although relative disadvantage was not explicitly mentioned, a considerable proportion of the descriptions provided by participants denoted relative disadvantage scenarios (like the one above). A high prevalence of relative disadvantage in participants' descriptions suggested that exposure to others benefitting from luck is meaningful for social comparison.

Table 2. Study 1 correlations: Luck-attributions, social judgments, and luck-beliefs

	Mean	SD	1	2	3	4	5	6
1. Dejection	3.75	2.24	1					
2. Luck Attribution	3.30	1.17	.22**	1				
3. Like	8.85	2.52	-.27**	-.09	1			
4. Warmth	7.99	2.40	-.33**	-.15†	.79**	1		
5. Deterministic Luck	-	-	.18*	.19*	-.08	-0.15†	1	
6. Personal Luckiness	-	-	-.11	-.03	.12	0.02	0.01	1

Note. \*\*  $p < .01$ , \*  $p < .05$ , †  $p < .08$  ( $N$ 's between 143-149)

***Social Judgments of the Lucky Individual.*** Means in Table 1 suggest that the lucky individuals were liked a lot and that their perceived warmth was high. Given that these individuals were close to the participants (most were classified as friends or close friends), it is understandable that social judgments toward them were generally positive. Regardless, I hypothesized that perceived relative disadvantage, perceived role of luck in another's advantage, and lay luck-beliefs should predict *less* positive social judgments of the lucky individual.

Relative disadvantage, measured via the dejection index, seemed to play a clear role. Participants' reports of dejection were associated with their social judgments. Owing to negative correlations in Table 2, lucky individuals that elicited higher dejection seemed to be less liked and perceived as less warm.

Although luck attributions predicted less positive social judgments, as hypothesized, these associations were weak. Luck-attribution predicted lower perceived warmth at  $r = -.15$  ( $p < .08$ ). Whereas luck-attribution negatively correlated with liking  $-.09$ , the correlation was not significant.

Luck-beliefs did play a role, albeit a small one. Deterministic luck predicted less perceived warmth at  $r = -.15$  ( $p < .08$ ). Similar correlations were found between the deterministic luck and liking, and between personal luckiness and both social judgments. However, these weak links failed to reach significance.

I also hypothesized that luck-beliefs would intensify the effect of luck-attributions on social judgments. This was observed in the case of warmth. In a multiple regression, luck-attributions interacted with deterministic luck to predict warmth,  $F(1, 139) = 3.76$ ,  $p = .05$ . However, main effects of luck-attribution,  $F(1, 139) = 2.38$ ,  $p = .13$ , and deterministic luck,  $F(1, 139) = 1.17$ ,  $p = .28$ , failed to reach significance. Critically, simple slopes suggested that luck-attributions were important for social judgments only when belief in deterministic luck was *low*. For participants with deterministic luck lower than the median, warmth was *negatively* correlated with luck attributions,  $r = -.29$ ,  $p = .01$ . For participants with deterministic luck greater than the median, warmth did not correlate with luck-attributions,  $r = .00$ ,  $p = 1$ . Therefore, luck-attributions meant lower perceived warmth only for participants who did *not* believe in the deterministic power of luck.

### ***Discussion***

Study 1 provided an important starting point in the inquiry of luck and perceptions of those who benefit from it. Specifically, Study 1 revealed that most people are aware of someone who they would consider “lucky”. In fact, only a handful of

participants failed to describe lucky individuals known to them. Furthermore, most of the lucky individuals were classified as friends or close friends. Thus, it seems people do not need to look far to find someone who benefits from luck. Therefore, Study 1 established the presence of luck-based inferiority in an ecologically valid context.

Data offered some clear insights into perceptions of luck and lucky individuals. Luck-attributions were associated with perceived relative disadvantage (dejection). This association suggests that we were able to illustrate the phenomenon of luck-based inferiority. Moreover, dejection, luck-attributions, and beliefs in deterministic luck were all associated with each other, as well as with social judgments. Specifically, dejection predicted lower liking and perceived warmth. Luck-attributions predicted lower warmth. Deterministic luck predicted more dejection, higher luck-attributions, and lower perceived warmth. Therefore, Study 1 establishes that both the perceived relative disadvantage as well as the perceived role of luck may undermine social judgments of individuals viewed as lucky.

However, it seems that relative disadvantage in luck-based inferiority was more important for social judgments than attributions to luck. Attributions to luck correlated negatively with warmth, but not with liking. The correlations between dejection and social judgments were relatively stronger. Furthermore, beliefs in the deterministic power of luck correlated positively with luck-attributions.

A comment is in order with regard to the effect of deterministic luck on perceived warmth. I found that luck-attributions predict lower warmth when belief in deterministic luck is weak. This suggests that luck-based attributions likely challenge the worldview of those who do not believe in luck or make them suspicious of the other's success given



that it seems to be obtained through a mechanism they do not believe in. Subsequently, such people may perceive lucky others negatively to the extent that they attribute the lucky individuals' circumstances to luck.

Although Study 1 helped to examine the phenomenon of luck-based inferiority as it exists in real life, it suffered from some methodological challenges. First, the observed correlations do not serve as evidence for a causal impact of relative disadvantage or perceived luck on social judgments. It is likely that the observed associations were driven by third variables. Second, certain confounds could have undermined the observation of strong associations between key variables. For instance, most of the lucky individuals described by participants were close to them (a friend or a close friend). It is plausible that closeness with the lucky individuals influenced perceptions of them. In general, the lucky individuals were liked and perceived as warm. The strong link between closeness and positive social judgments may have thus restricted any negative effects of luck-attributions and relative disadvantage.

Studies 2 and 3 were conducted to address the above-mentioned methodological constraints of Study 1. Given that the following studies involved experimental manipulation of luck and relative disadvantage, they were better able to control for confounds. Moreover, in both of the next two studies participants provided social judgments of an individual who they did not know. Therefore, it was less likely that closeness with the lucky individual would constrain any effect of perceived luck and relative disadvantage on social judgments.

In sum, Study 1 was an important first step in the exploration of luck-based inferiority and its impact on social judgments. Relative disadvantage was more important

for social judgments than luck-attributions themselves, although both predicted slightly more negative linking and warmth. Deterministic luck was associated with perceived warmth in an unexpected way (luck-attributions predicted lower warmth when beliefs in deterministic luck were weak). Studies 2 and 3 examine and elaborate on these findings in an experimental framework.

## **PART II. IMPLIED (VS. ABSENT) LUCK OF ADVANTAGED OTHERS**

The objective of Study 2 was to provide a more stringent test of the causal link between luck and negative perceptions of lucky individuals. Participants read about two targets that were in the same ‘fortunate’ circumstances, except that luck was portrayed as playing a major role for only one of them. Both targets were portrayed as enjoying many outcomes that undergraduate participants would want for themselves (being close to family, having good roommates, having a good campus job, etc.). Thus, experiences of targets were self-relevant for participants and potentially highlighted their personal disadvantages.

### ***Method***

***Participants and Design.*** Two hundred and sixty-three students (65% female, mean age 19.2) from a large Midwestern university served as research participants in exchange for course credit. The sample size allowed detecting even a modest effect size of  $d=.30$  with sufficient power (80%, see Cohen, 1988). Each participant was randomly assigned to read one of two articles about a peer (gender neutral).

***Procedures and Measures.*** To maintain the cover story, the study was conducted in a group therapy clinic at Iowa State University. Upon participants’ arrival to the clinic, the experimenter introduced the study as aimed toward understanding “how to enhance communication in psychotherapy”. Furthermore, participants were told that one interest is to simulate the process of observing a client in therapy. Participants were told that they would read snippets taken from actual psychotherapy sessions at the student counseling center, and subsequently answer questions about the client. Each snippet was ostensibly

an excerpt from a conversation between a therapist and a client. Scripts for each condition have been provided below.

***Script for the “Luck Absent” condition***

Therapist: “Today I would like you to think about all the good things in your life. Please share with me what it is that you are grateful for in your life, more recently.”

Client: “Right now? Lets’ see! Here in Ames, I am not at all far from my family. My father has a job in Des Moines. It’s nice to be able to go home when I want. I don’t mind the 35 minute drive. At ISU, I live in Frederickson Court, which is very convenient. There I’ve found good roommates that I became good friends with. Ummm...Recently, I started working at the international students’ and scholars’ office. It is the office that is located on the third floor of the Memorial Union. I really wanted that job because I want to go into international affairs and this might be a good start. I like working there.”

Therapist: “Please go on.”

Client: “What else? I’m looking forward to this internship next summer. I will be working with a law firm. The internship will start in mid-May and last until August. So, that’s about 3 months. In the spring, though, I will study abroad in Spain! I hope things will go well!”

***Script for the “Lucky Target” condition***

Therapist: “Today I would like you to think about all the good things in your life. Please share with me what it is that you are grateful for in your life, more recently.”

Client: “Right now? Lets’ see! Actually, I think I tend to be very fortunate. Mostly, good things keep happening even when I don’t expect them. So, when I was going to start ISU, I was concerned about being far from home. But, a position opened up in Des Moines

*around the same time, and my father transferred just when I moved. It is so nice to be able to go home when I want! At ISU, I have been living in Frederickson Court, which is very convenient. I actually had to turn in my application the last minute, but there was still room, so I didn't have to sweat over it! I got some great roommates who I became friends with. Actually, my roommates and I applied around the same time and maybe that's why we landed up as roommates? It's great how it just sort of happened.*

*Ummm...Recently, I started working at the international students' and scholars' office. I really wanted that job because I want to go into international affairs and this might be a good start. Luckily one of my roommates happened to work there so that's how I found out about it. If it was not for my roommate, I would never have landed such a great job."*

Therapist: *"Please go on."*

Client: *"What else? I am looking forward to this internship next summer. Again, it's interesting how I got it! A graduating international student was having legal issues. Somehow, I got to deal with his paperwork. Through him, I interacted with this law firm and that's where I will do my internship. In the spring, though, I will study abroad in Spain! My advisor, where I work, gave me the info about scholarships, and now I get to study abroad. Sometimes I wonder how things will go. But, again I am counting on a lucky break; I seem to have many of those.*

Thus, each script created the impression that the client's life contained many desirable experiences (lived close to family, had good roommates, had a good job on campus, etc.). In the "Luck Absent" condition, however, the client merely described all the good things in life. Conversely, in the "Lucky Target" condition, the client explained how those good things happened in interesting and unexpected ways. This client also

mentioned the role of favorable luck in their own life. After reading the article, participants received a similar questionnaire as in Study 1 (see Appendix B for more details). Luck-belief scales and subscales were factor analyzed to extract two factors: deterministic luck and personal luckiness (see Table 1 for loadings).

### ***Results***

Overall, there was at least partial support for the idea that luck-based inferiority leads to less positive social judgments given that perceived relative disadvantage and the manipulated luck of the target predicted lower perceived warmth. Although associations between luck-beliefs and social judgments were weak, lower beliefs in deterministic luck and personal luckiness intensified the effect of target's luck on more negative social judgments.

***Manipulation Checks.*** As anticipated, the participants who read about the lucky target reported stronger luck-attributions (Table 3) compared to the luck-absent condition.

***Social Judgments of the Lucky Individual.*** Means in Table 4 suggest that participants thought highly of the "client" in the script. This individual was liked a lot and was perceived as highly warm. I hypothesized that perceived relative disadvantage, perceived role of luck in another's advantage, and lay luck-beliefs should predict *less positive* social judgments of the lucky individual. Before examining the hypothesis, I present the reported thoughts of one participant who read about the lucky target. The participant clearly paid attention to the role of luck in the life of the target. Moreover, the script led to a sense of relative disadvantage as the participant thought about ways in which the target's life was relatively better.

*“I'm glad that their life and luck is going so well, but I'm really jealous because I feel like I work really hard and am not getting even half the results the client is. I wish my life would fall into place like theirs is. However, I feel like they're taking advantage of their luck and not trying as hard as they could be.”*

Table 3. Reactions as a function of target luck in Study 2

	Luck-Absent (n=137)	Lucky-Target (n=126)	<i>d</i>	<i>t</i> (1-sided)	<i>p</i>
Dejection	.93 (1.28)	1.15 (1.64)	.14	-1.16	.88
Luck-Attribution	2.47 (.98)	3.86 (1.05)	1.37	-11.06	<.001
Like	7.24 (2.01)	6.85 (2.00)	-.19	1.55	.06
Warmth	8.22 (1.14)	7.80 (1.42)	-.32	2.59	<.01

Table 4. Descriptive Statistics and Correlations in Study 2

	Mean	SD	1	2	3	4	5	6
1. Dejection	1.03	1.47	1					
2. Luck Attribution	3.13	1.23	.15*	1				
3. Like	7.06	2.01	-.07	-.01	1			
4. Warmth	8.02	1.30	-.34**	-.20*	.40**	1		
5. Deterministic Luck	-	-	.08	.16**	.10†	.07	1	
6. Personal Luckiness	-	-	-.10†	-.06	.02	.01	-.07	1

Note. \*\*  $p < .01$ , \*  $p < .05$ , †  $p = .09$ . ( $N = 259-263$ )

***The Role of Relative Disadvantage in Social Judgments.*** Perceived relative disadvantage was again measured via the dejection index. Overall, participants reported extremely low levels of dejection ( $M=1.03$  on a scale of 0 to 11). Manipulation of the target's luck did not alter the sense of dejection experienced by participants (Table 3). However, luck-attributions positively correlated with dejection, albeit weakly (Table 4). Moreover, although dejection was uncorrelated with liking, it did predict lower perceived warmth. Therefore, perceived relative disadvantaged was associated with less positive social judgments of the target individual.

***The Role of Perceived Luck in Social Judgments.*** Manipulation of the target's luck affected both social judgments of liking and perceived warmth. As shown in Table 3, the lucky target was liked less and perceived less warm. However, the effect-size in case of both judgments was in the weak to moderate range. In fact, the effect of target on liking was only marginally significant. Furthermore, luck-attribution predicted lower perceived warmth but was uncorrelated with liking at the zero-order level.

Given that the target was not equally lucky in both conditions, it is likely that luck-attributions held different meanings for social judgments in the two conditions. For instance, luck-attributions might predict social judgments especially when the target is seen as lucky. In a multiple regression of *liking* on target luck, luck-attribution, and an interaction term as predictors, the interaction term was significant,  $F(1,256) = 7.46$ ,  $p < .01$ , but the main effects of target luck,  $F(1,256) = 2.52$ ,  $p = .11$  and luck-attribution,  $F(1,256) = 2.12$ ,  $p = .15$ , were not quite significant. Simple slopes suggested that luck-attributions were *not* associated with liking in the case of the luck-absent target,  $r = -.12$ ,  $p = .15$ . However, high luck-attributions predicted *more* liking for the lucky target,  $r = .21$ ,  $p = .02$ . This finding was unexpected.

Next, in a multiple regression of *warmth* on target luck, luck-attribution, and an interaction term as predictors, the main effect of luck-attributions was significant,  $F(1,256) = 6.22$ ,  $p = .01$ , but the main effect of target luck,  $F(1,256) < 1$  and the interaction term,  $F(1,256) = 1.77$ ,  $p = .18$ , were not significant. Given that the main effect of condition ceased to be significant, results suggest that luck-attributions accounted for the effect of target luck on lower perceived warmth.



***Luck-Beliefs and Social Judgments.*** I also hypothesized that beliefs in the deterministic power of luck and personal luckiness would negatively affect reactions to the target's luck. Results of regression analyses presented next examine interaction between the manipulation of target luck and luck-belief factor scores. As in Study 1, different luck-belief scales were factor analyzed to extract two factors, namely deterministic luck and personal luckiness (see Table 1 for loadings). Extracted factor-scores were again used in data analyses.

In a multiple regression of liking on target luck, personal luckiness, and an interaction term, the interaction effect was marginally significant,  $F(1,257) = 3.57$ ,  $p = .06$ . Main effects of target luck,  $F(1,257) = 2.69$ ,  $p = .10$  and personal luckiness,  $F(1,257) = 1.17$ ,  $p = .28$  failed to reach significance. Figure 2 illustrates the interaction effect. Specifically, for participants with weak beliefs in personal luckiness, target's luck predicted lower liking,  $t(114) = 2.96$ ,  $p < .01$ ,  $d = .54$ . For participants with strong beliefs in personal luckiness, target luck did not predict liking,  $t(136) = -.79$ ,  $p = .43$ ,  $d = .19$ . In a multiple regression of liking on target luck, *deterministic* luck, and an interaction term, the interaction was not significant.

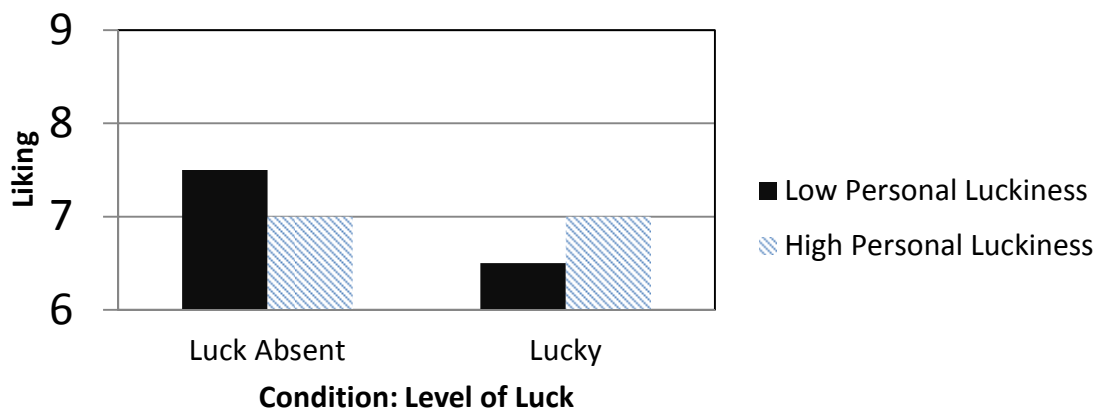


Figure 2. Judgments of liking as a function of personal luckiness and target luck

In a multiple regression of *warmth* on target luck and deterministic luck, the main effect of target luck,  $F(1,257) = 6.90$ ,  $p < .01$ , and the interaction effect were significant,  $F(1,257) = 3.83$ ,  $p = .05$ . The main effect of deterministic luck was not significant,  $F(1,257) < 1$ . Figure 3 illustrates the interaction effect. Simple effects revealed that for participants with weak beliefs in deterministic luck, target luck predicted *lower* perceived warmth,  $t(118) = 2.83$ ,  $p < .01$ ,  $d = .50$ . For participants with strong beliefs in deterministic luck, target luck did not predict warmth,  $t(136) = -.79$ ,  $p = .43$ ,  $d = .14$ . This finding was similar to the observation in Study 1, wherein luck-attributions predicted lower warmth when beliefs in deterministic luck were low. However, in a multiple regression of warmth on *personal luckiness*, target luck, and their interaction term, the interaction was not significant.

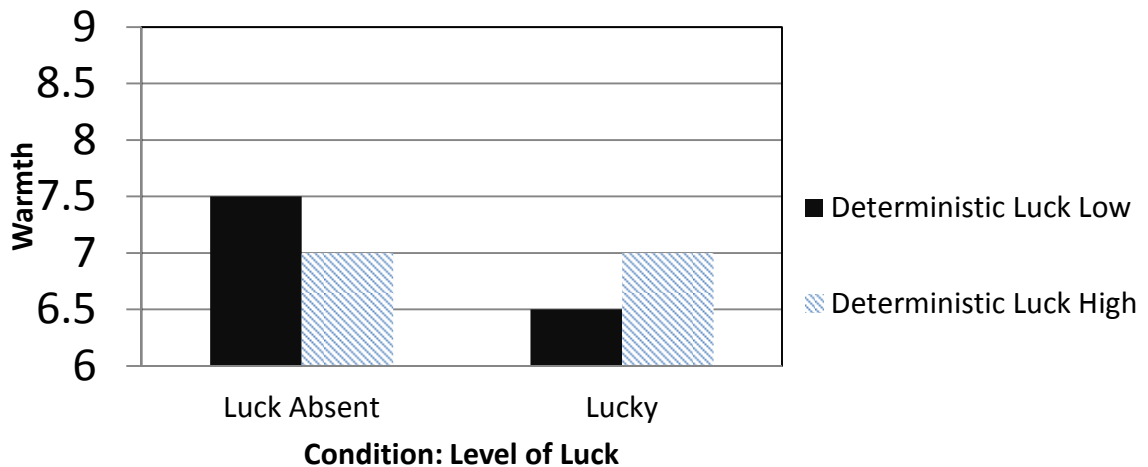


Figure 3. Judgments of warmth as a function of deterministic luck and target luck

***Moderated-Mediation of the Effect of Target Luck on Liking via Luck-Attribution.*** I hypothesized that beliefs in the deterministic power of luck should sensitize people to the implications of luck in the life of the target. If so, luck-attributions should be linked to social judgments more strongly in the case of people who hold strong beliefs

in deterministic luck (moderated-mediation). A test of moderated-mediation involves examining three models. The first model involves a simple moderated regression on the outcome variable, in this case predicting *liking* as a function of the target's status, deterministic luck, and their product term. As per Muller and colleagues (2005), a necessary condition for moderated mediation is a main effect of the predictor (in this case the target's manipulated luck) that is not contingent upon the moderator (in this case deterministic luck). In a multiple regression of liking on target's luck, deterministic luck and an interaction term, the main effect of target's luck was not significant,  $F(1, 257) = 2.55, p = .11$ . Therefore, there was no evidence for a moderated mediation (Muller et al., 2005).

***Moderated-Mediation Effect of Target Luck on Warmth via Luck-Attribution.***

Next, I examined moderated-mediation with warmth as the outcome variable. The first model involves a simple moderated regression on the outcome variable, in this case predicting *warmth* as a function of the target's manipulated luck, deterministic luck, and their product term. Given that the effect of target's luck on warmth was moderated by deterministic luck, I examined the second model. The second model is the same, with the exception of the dependent variable being the *mediator*, in this case attributions to luck. Both target's luck,  $F(1,256) = 133.35, p < .01$  and deterministic luck,  $F(1,256) = 5.80, p = .02$  revealed significant main effects. The third and final model involves predicting the outcome variable (*warmth*) via the same variables as in the first model, with the addition of the mediator variable (luck-attributions) and the product term of the mediating and the moderating variable (luck- attributions \*deterministic luck). In essence, this model allows for the mediator's (partial) effect on the outcome as well as the residual effect of

condition on outcome to be moderated. However, the product of luck-attributions and deterministic luck was not significant,  $F(1,253) < 1$ . Therefore, there was no evidence for moderated mediation with deterministic luck as the moderator.

### *Discussion*

Reading about a lucky vs. luck-absent target enabled a focus on the role of luck in luck-based inferiority while controlling for relative disadvantage. However, the mean levels of dejection were extremely low. This suggests that participants did not necessarily think that the target was superior to them or had more advantages than they had. Yet, it was clear that the lucky target was liked less and was perceived less warm compared to the luck-absent target. In addition, participants perceived less warmth when they made luck-based attributions.

Although the lucky target was liked less, an unexpected interaction was observed in a regression of liking on target's luck and luck-attributions. Simple slopes suggested that whereas luck-attributions were uncorrelated with liking in the luck-absent target, luck-attributions predicted more liking in case of the lucky target. A couple of comments are in order. First, after having controlled for the condition (target's luck), it is not exactly clear as to what explains the remaining variance in luck-attributions. Therefore, it is hard to interpret the association between luck-attributions and liking after controlling for the condition. Second, given that dejection was not very strong, it is plausible that participants did not see the target as a threatening social comparison target. Therefore, luck-based events or outcomes could cause liking in line with the luck preference phenomenon discussed earlier.

On the other hand, luck was associated with warmth more consistently than with liking. First, perceived warmth was lower for the lucky target. Second, luck-attributions negatively correlated with warmth. Therefore, stronger luck-attributions predicted lower perceived warmth, as in Study 1. Third, in a multiple regression, luck-attribution accounted for the effect of target's luck on warmth.

Beliefs in luck also seemed to play an important role even though there was not enough evidence for moderated mediation with luck-attributions as the mediator. Specifically, belief in personal luckiness moderated the effect of target's luck on liking and belief in deterministic luck moderated the effect of target's luck on warmth. In both cases, target's luck affected social judgments only when luck-beliefs were low. When personal luckiness was low, the lucky target was liked less than the luck-absent target. This suggests that the lucky target was a threatening comparison target for participants who did not think they were lucky. Therefore, such participants may have construed the "lucky" advantages of the target as unfair or immoral. When deterministic luck was low, the lucky target signaled less warmth than the luck-absent target. This suggests that the lucky target was a threatening comparison target for participants who did not believe that luck can be a deterministic factor in one's life. Therefore, such participants may have also construed the "lucky" advantages of the target as unfair or immoral. However, these findings were neither expected nor consistent across the two measures of social judgments, so their interpretation should remain tentative. In sum, the findings lend at least partial support to hypotheses regarding social judgments amidst luck-based inferiority. Importantly, perceived luck in peers' advantages can make us like them less and see them as less warm individuals. Thus, findings of Study 2 clarify social judgments

amidst luck-based inferiority and call into scrutiny the well-documented phenomenon of *luck-preference*. Study 3 teases apart another important feature of luck-based inferiority, namely relative disadvantage, presented next.

### **PART III. LET'S MAKE A DEAL!**

Study 3 further advanced understanding of the way lucky individuals are perceived and what behavioral consequences that may carry. In Studies 1 and 2, the focus was on the role of luck itself. However, in Study 3, I examined the role of self-relevant disadvantage—a factor that was also overlooked in the studies that demonstrated the ‘luck preference’ effect (Olson, 2008; Olson et al., 2006; Olson et al., 2008). In Study 3, participants observed a confederate who played a luck-based game. The participant either served as an observer of the confederate, or played the game first and lost. Thus, in one condition, the luck-based success of the confederate put the participant at a clear relative disadvantage. Participants then reported social judgments of the winning confederate. Study 3 also included a behavioral task that assessed perceived trust in lucky individuals. This was a key test of whether luck-based impressions have consequences for interpersonal behavior.

#### ***Method***

***Participants and Design.*** One hundred and forty-seven students (63% female) from a large Midwestern university served as research participants in exchange for course credit. Thirteen participants either expressed suspicion about the purpose of the study or were unable to understand the protocol because they were not fluent in English. Data from these participants were not included in the analysis. Thus, the total sample size was 134. This allowed sufficient power (.80) for detecting even a modest effect size of .30 (Cohen, 1988). Each participant was randomly assigned to one of two conditions: observer vs. loser.

***Procedures and Measures.*** Participants were told that the objective of the study was to better understand behavior of people in TV game shows. Participants were led to believe that there was another participant, who was actually a confederate. The confederate played a luck-based game adapted from the TV show “Let’s make a deal!” The experimenter served as the host. The game was staged such that the confederate ‘won’ four out of four games. In the *loser* condition, the participant first played the luck-based game adapted from the TV show “Let’s make a deal!” him or herself. The game was rigged such that the participant lost in all trials. Finally, participants observed their presumed co-participant win four out of the four trials. The *observer* condition was similar to the *loser* condition with one exception. In the *observer* condition, participants did not play the luck-based game. They simply observed the confederate win.

***Luck-based Game.*** In the first game, players were required to open a lock by finding the right key in 40 seconds. Ten keys were hung on an artificial tree across the room. Every time, the player would pick up a key from the tree, run to the lock and try opening it. The confederate knew the location of the correct key. However, the confederate grabbed the correct key only on the third attempt. When the participant played the game (in the loser condition), the correct key was never hung on the tree to prevent victory. The confederate ostensibly won a \$15 gift card.

In the second game, players were required to flip playing cards spread on a desk. To win the game, players needed to find five hearts before they got three spades. To ensure victory of the confederate, only two spades were included in the cards. When the participant played, there were only four hearts to prevent victory. The confederate ostensibly won a dinner for two at a nice local restaurant.



In the third game, players put their hand inside a box to pull out slips with numbers written on them. They got four attempts to get a total sum of eighty. To ensure victory of the confederate, numbers ten and twenty were written on one slip each. All the other slips had thirty written on them. Thus, the confederate got a sum of at least eighty (in four attempts). When the participant played (in the loser condition), numbers twenty and thirty were written on one slip each. All the other slips had ten written on them. Thus, the participant always got a sum less than eighty. The confederate ostensibly won tickets to a show of their choice.

After “losing” the first three games, participants were told that they were not eligible for the fourth game, which was to be played “only after the first three games were won”. The confederate always played the fourth game. In this game, the confederate chose numbers from 1 to 10. These numbers were incorporated with sounds via a powerpoint presentation that was projected on a screen. When the confederate chose a number, the experimenter clicked on it to play the associated sound. The goal was to avoid two “zonk” sounds in four attempts. The confederate knew which numbers were associated with “zonk” sounds and chose only one of them. The prize for winning the final game was a one-night's stay at an expensive hotel in a nearby city.

After every victory, the experimenter congratulated the confederate and made explicit comments suggesting that the confederate was lucky (e.g., “Most people in this study win only one or two games, if at all. You must be really lucky!”). Therefore, the confederate was portrayed as equally successful (and lucky) in both conditions. Although the actual participant merely observed the confederate's success in the *observer* condition, in the *loser* condition the participant lost the first three games before watching

the confederate win. Eight female undergraduate students played the role of the confederate in different experimental sessions. After the participant lost the games in the loser condition, the experimenter needed some time to set up game-materials for the confederate. While the experimenter cleared the room and stepped out into the foyer, a filler task was utilized to keep participants occupied. Specifically, participants answered bogus questions about game shows that they liked to watch.

After the confederate won the game, participants reported their reactions (emotional reactions, luck-attributions, and social judgments), similar to Studies 1 and 2. The same scales used in the previous studies were used in Study 3 as well with the exception of luck-attributions. In Study 3, luck-attributions were rated on a scale of 0 (=Not At All) to 11 (=A Great Amount). Note that the confederate was more successful than the participant in the loser condition. However, in the observer condition, success of the confederate had no direct implications for the participant.

*Behavioral task.* A modified version of a trust-game was used as a behavioral measure of trust (Berg, Dickhaut, & McCabe, 1995; Lount, 2010). Participants were told that they had been randomly assigned to the role of a sender in a decision-making game. They had \$40 to “send” to the confederate. They had the option to send all or a part of the amount to the “other participant” (confederate). They were told that the experimenter would triple the amount sent before giving it to the confederate. The confederate ostensibly had the choice to return any amount between \$0 and \$120. The original amount sent served as a behavioral measure of trust.

The trust game was administered after participants provided ratings of social judgments. It was anticipated that that participants would not part with the entire \$40 in

the trust game. Therefore, positive affect could result from the hope of having received money. If social judgment ratings were made after the game of trust, the intermediate positive affect could impact judgments. Accordingly, the trust game was administered afterward.

Subsequently, participants completed questionnaires to assess luck-beliefs similar to those in previous studies (see Appendix C). Luck-belief scales were factor-analyzed to extract factor scores of deterministic luck and personal luckiness (see Table 1 for loadings). Finally, participants were debriefed and thanked.

### ***Results***

I hypothesized that luck-related outcomes of another individual would receive greater scrutiny when those outcomes create relative disadvantage. Specifically, social judgments should be less positive and money “sent” in the trust-game should be lower in the loser condition. Overall, the lucky confederate elicited favorable social judgments. Self-reports of liking and perceived warmth were highly positive.

***Manipulation Check.*** As shown in Table 5, participants accurately attributed the confederate’s success to luck. They reported very high luck-attributions in both conditions, which is expected given that the games were luck-based. Furthermore, perceived relative disadvantage was higher in the loser condition. Specifically, participants reported higher levels of dejection in the loser condition compared to the observer condition. Thus, losing to the same lucky individual (vs. merely observing the lucky individual win) led to greater relative disadvantage. However, it is noteworthy that participants did not report high levels of dejection in either condition. Whereas it is plausible that they either did not experience intense dejection, it might also be true that

participants' self-reports were not completely valid given the pressure to behave in socially desirable ways.

Table 5. Reactions as a function of Role of the Participant in Study 3

	Role: Observer (n=68)	Role: Loser (n=66)	d	t (1-sided)	p
Dejection	.97 (1.29)	1.47 (1.72)	-.33	-1.92	.03
Luck-Attribution	9.62 (2.32)	9.03 (2.40)	.25	1.44	.07
Like	7.34 (2.36)	6.76 (2.18)	.26	1.48	.07
Warmth	8.90 (1.22)	8.50 (1.59)	.28	1.66	.05
Cash (\$)	22.38 (10.77)	18.03 (8.93)	.44	2.54	<.01

Table 6. Descriptive Statistics and Correlations in Study 3

	Mean	SD	1	2	3	4	5	6	7
1. Dejection	1.22	1.53	1						
2. Luck Attribution	9.33	2.36	.16 <sup>†</sup>	1					
3. Like	7.06	2.28	-.02	.28**	1				
4. Warmth	8.70	1.43	-.18*	.16 <sup>†</sup>	.68**	1			
5. Cash	20.26	10.11	-.11	-.07	.20*	.18*	1		
6. Deterministic Luck	-	-	.13	.23*	-.01	-.02	.03	1	
7. Personal Luckiness	-	-	-.14	-.01	.14	.11	.07	-.06	1

Note. \*\* p<.01, \* p<.05, † p=.06. (N's between 120-134)

***The Role of Relative Disadvantage in Social Judgments.*** The lucky confederate in the loser (vs. observer) condition elicited less positive judgments (Table 5).

Participants reported less liking and perceived warmth in the loser condition. Although the difference in warmth across condition was significant, the difference in liking was only marginally significant. Therefore, relative disadvantage in luck-based inferiority was at least somewhat important for shaping perceptions of lucky individuals.

In the trust-game, participants “sent” less money to the lucky confederate in the loser (vs. observer) condition. On average, the difference in amount “sent” was \$3.30, or almost 8% of the total amount of many at hand. This again suggests that participants in

the loser condition did not trust the confederate as much. If they did, they would have utilized the opportunity to “send” more money in hopes of better returns.

Participants’ reports of relative disadvantage, namely dejection, also served to test links between relative disadvantage and social judgments. Dejection predicted lower perceived warmth (Table 6). Although dejection negatively correlated with cash, the correlation was not significant. Furthermore, dejection was uncorrelated with liking.

Thus, there was at least partial support for links between relative disadvantage and negative social judgments. Losing to, rather than merely observing, a lucky target predicted less positive social judgments (lower perceived warmth and liking) and lower trust behavior. In addition, self-reports of dejection predicted lower perceived warmth.

***The Role of Luck in Social Judgments.*** Contrary to the expectations, attributions of the confederate’s success to luck predicted *more positive* social judgments. Attributions to luck correlated positively with liking and perceived warmth, although the correlation with warmth was only marginally significant. These correlations are inconsistent with hypotheses about luck-based inferiority. Instead, they support the luck-preference phenomenon.

***The Role of Luck-Beliefs in Social Judgments.*** Two factors of deterministic luck and personal luckiness were extracted from luck-belief scales (see Table 1 for factor-loadings). Beliefs in deterministic luck predicted stronger attributions to luck (Table 5). However, neither of the luck-belief factors correlated with any other variables at the zero-order level.

I tested various regression models with liking, perceived warmth, or cash as dependent variables. The predictors were the role of the participant, a luck-belief factor

(deterministic luck or personal luckiness), and their product terms. Neither the main effect of any luck-belief factor, nor the interaction term were significant,  $F$ 's < 1, except in the case of the following model.

In a multiple regression of liking on the experimentally-manipulated role of the participant, personal luckiness, and an interaction term, the interaction term was significant,  $F(1, 117) = 6.47, p = .01$ . Tests of simple slopes revealed that whereas personal luckiness did not predict liking in the observer condition,  $\rho = -.07, p = .52$ , personal luckiness predicted greater liking in the loser condition,  $\rho = .35, p < .01$ . Given the large number of analyses and the unexpected nature of this particular finding, however, it should be treated with caution.

### ***Discussion***

In short, Study 3 helped isolate the role played by relative disadvantage in the way lucky individuals are perceived. Study 3 also measured trust in an actual behavioral task (an advance over previous studies). As expected, participants reacted differently to the same lucky target contingent on their relationship to the target. When participants lost in the luck-based game (prior to observing the confederate win), they reported less liking and less perceived warmth. Subsequently, participants had the opportunity to share some money with the confederate with the hope of a monetary return. The more money they shared, the bigger return they could expect provided they trusted the confederate. Participants in the loser condition gave less money, suggesting that they trusted the confederate less compared to the observer condition. Among the luck-belief factors, only personal luckiness correlated with liking (in the loser condition). This may suggest that

when people do not consider themselves to be lucky, they would like a lucky individual (who is also better-off than them) less.

Although data were generally consistent with my original hypotheses regarding luck, relative disadvantage and social judgments, the observed effects were not very strong. For instance, liking and perceived warmth were very high regardless of the role of the participant. Given that participants interacted with the confederate, it is plausible that the role of the participant was but one of the factors that influenced their reactions toward and perceptions of the confederate. All the confederates were well-dressed, well-behaved, polite, and courteous women in their early twenties. Therefore, it makes sense that they elicited highly positive social judgments.

It is also the case that participants reported extremely low levels of dejection, regardless of their role. Thus, it is questionable whether they experienced strong relative disadvantage. I did not ask participants whether (or the extent to which) they would have liked to win the luck-game. It is plausible that not all participants were invested in winning a luck-game for some prizes. Even if they were, they probably did not construe their loss as a sign of a personal lack. With this in mind, it may not be surprising that luck-attributions predicted greater liking and warmth.

Nevertheless, relative disadvantage in the context of luck-based inferiority predicted less positive social judgments and lower trust toward the lucky confederate. Note that cash “sent” in the trust game also correlated positive with liking and warmth, consistent with the assumptions that the trust game reveals one’s level of trust or good will.

## GENERAL DISCUSSION

### *Research Objectives*

Our social experiences often make us realize that we are not in control of our environment. We might want certain things and work hard toward them, but we are not always successful. Yet, there is no dearth of people who are further ahead toward those goals who seem to have it much better than we do. We all know people who seem to be happier, make more money than we do, are smarter, more intelligent, more good looking, or more popular than us. Whereas some of these better-off individuals inspire us to have what they have, others make us contemplate the reasons for our relative lack.

What if there was no good reason? Not uncommonly, some people are better-off than us due to purely external factors. This dissertation took a closer look at such instances of luck-based inferiority. Specifically, I focused on social judgments elicited by lucky individuals: do we like them, or think that they have good intentions? The extant psychological literature does not provide unequivocal answers to this question. Research in the *luck-preference* domain predicts that lucky individuals ought to be seen in a positive light. Research in the *envy* domain predicts that superior others ought to be seen in a negative light, especially when differences are considered unattainable (Elster, 1998). However, findings from these different research domains are not generalizable to luck-based inferiority for reasons noted earlier in the introduction.

I hypothesized that two factors would determine social judgments elicited by others advantaged by luck, namely perceived relative disadvantage and attributing another's advantage to luck. Perceived relative disadvantage would reflect self-relevance and a heightened scrutiny of the situation and its implications. Attributions to luck would



denote attention to the role of external factors in another's advantage. I hypothesized that both of these factors would create more negative social judgments amidst luck-based inferiority. Moreover, luck-related beliefs were expected to sensitize people to the role of luck in others' lives. Therefore, the presence of luck-related beliefs should have intensified the effect of perceived relative disadvantage and attributions to luck.

Hypotheses were examined in a set of three studies where participants reported their perceptions of another individual. Critically, my predictions were more in line with findings from the *envy* domain, i.e., lucky individuals should be viewed negatively in the context of luck-based inferiority. These predictions were based on the notions that (1) luck-based relative disadvantage could thwart one's need for competence because it is not clear how one may reduce the disparity, and (2) it could also be perceived as a violation of fairness, especially luck egalitarianism.

***Partial Support for the Role of Luck in Social Judgments.*** My interest was in examining the role of luck-attributions in shaping perceptions of those who benefit from luck. The important question was whether perceived luck translates into social judgments, namely liking and perceived warmth. Regarding this core hypothesis, the findings were mixed. Luck-attributions were very weakly associated with social judgments of lucky individuals in peoples' own social circles (Study 1). Although the correlations were in the expected direction, luck-attributions did not seem to play a considerable role in how lucky others were viewed. This is understandable given that these lucky individuals were very close to participants in the study. Whereas Study 1 data constituted only weak evidence, they point toward the need for better methodological control—a more representative sample of lucky individuals. Given that the lucky

individuals described by participants were very close to participants, these lucky individuals were probably only a subset of lucky individuals who might also be known to participants. Note that the self-evaluation maintenance model would suggest that the success of a close other could also improve liking (Tesser, 1991, 1998). Therefore, it is likely that the methodology prevented a precise estimation of the links between luck-attributions and social judgments.

Study 2 and 3 addressed the potential methodological constraints of Study 1. In Study 2, participants read about a peer who enjoyed several good outcomes. Information about this peer was created for the purpose of the study. Thus, participants were not familiar with the peer. Therefore, actual closeness could not have influenced their social judgments. In Study 3, participants provided social judgments of a confederate who they did not know before the start of the study. Once again, it was unlikely that closeness could have shaped social judgments.

In the case of Study 2, luck-attributions played a meaningful role by explaining the link between target's luck and perceived warmth. However, luck-attributions correlated with *greater* liking in the case of the lucky target. This was not an isolated finding. In Study 3 as well, luck-attributions predicted more liking and warmth. These findings contradict the hypotheses regarding luck-based inferiority. A close look at dejection ratings helps to clarify this unexpected finding. In both Studies 2 and 3, participants reported extremely low dejection. Thus, although they correctly attributed outcomes to luck (when appropriate), they did not necessarily feel that the lucky individual was better than them in a self-relevant manner. Self-relevance was hypothesized as a key ingredient of luck-based inferiority. In the absence of self-

relevance, it is no surprise that findings were somewhat consistent with the phenomenon of luck preference. As such, data did not support the idea that the endorsement of luck in another individual's advantage elicits negative social judgments, although experimentally manipulating luck of another seemed to have such an effect.

*Support for the Role of Relative Disadvantage in Social Judgments.* There was more clear support regarding the role of relative disadvantage in luck-based inferiority. Although participants in all studies reported low levels of dejection, dejection was consistently associated with social judgments. Dejection predicted lower perceived warmth in all studies. Whereas dejection correlated negatively with liking, the correlation was significant only in Study 1. Moreover, in Study 3, participants who experienced relative disadvantage (loser condition) reported less liking and perceived warmth and “sent” less money to the confederate in a trust-game.

Nevertheless, reports of low dejection are a matter of concern from the perspective of studying luck-based inferiority. In the absence of dejection, luck-based inferiority would likely lack its core characteristic of self-relevance. Therefore, negative reactions would not be expected. This was reflected in the generally high ratings of liking and warmth across all studies. Therefore, a stronger manipulation of relative disadvantage was probably necessary.

*Inconsistent Evidence for the Role of Luck-Beliefs in Social Judgments.* It was also anticipated that the findings in the context of luck-based inferiority would be stronger for people who believe in the deterministic power of luck and in personal luckiness. Deterministic luck was expected to predict stronger attributions to luck—this was observed in all three studies. Personal luckiness was expected to guard people from

the negative repercussions of social comparison with lucky others. Although personal luckiness predicted lower dejection, the correlations were very weak.

In Studies 2 and 3, I tested whether luck-beliefs interacted with experimentally manipulated perceived luck of another or one's own relative disadvantage. Thus, it was possible to test whether deterministic luck or personal luckiness intensified or curbed the effect of luck-based inferiority on social judgments. In Study 2, target's luck predicted lower liking (but not warmth) for participants with *weak* beliefs in personal luckiness (but not deterministic luck). Conversely, again in Study 2, target luck predicted lower perceived warmth (but not linking) for participants with weak beliefs in deterministic luck (but not personal luckiness). In Study 3, personal luckiness predicted greater liking in the loser condition. No other main or interaction effects were observed with luck-beliefs or a product term involving luck-beliefs as predictors. Moreover, there was no evidence for moderated-mediation via luck-attributions. Thus, there was no clear evidence for a systematic effect of luck-beliefs. If anything, beliefs in personal luckiness buffered the negative impact on social judgments—a finding, which tentatively suggest that not accepting luck as a force may frustrate judgments of others benefiting from luck.

### ***Implications for Inherent Inequalities***

Luck-based differences point toward a special kind of inequalities, which I would call *inherent* inequalities. External factors often create important social inequalities because some people start out in life with important advantages over others. Such inequalities are *inherent* because people have very little control over them. *Winning* the genetic lottery can bestow a lifelong impact on domains like physical health, intelligence, and attractiveness. To elaborate, attractive people “luck out” for life given that others

treat them nicely; they have more choices in romantic partners, and more power in relationships. Inequalities in terms of family wealth, emotional stability, creativity, and sense of humor are some other examples of *inherent* inequalities.

Inherent inequalities (or advantages accrued from them) are not immune to standards of fairness discussed earlier in this research. Distributive fairness stands violated by the very nature of unequal distribution of intelligence or attractiveness. Procedural fairness stands violated in light of the arbitrary process by which allocation (of intelligence or attractiveness) occurs. The complex standard of luck egalitarianism stands violated because advantages resulting from naturally bestowed traits would not necessarily reflect “choices with respect to income and leisure, but myriad forms of lucky and unlucky circumstance” (Cohen 2000, p. 130).

In addition to being objectively unfair, inherent inequalities correctly yield perceptions of injustice. Some insights come from research on the emotion of envy, which is likely to arise in the event of inherent inequalities. Smith and Kim (2007) contend that resentment is a part of the experience of envy. The sense of injustice in envy also has important implications for depressive feelings that accompany the emotion of envy (Smith et al., 1994).

Yet, the unfairness of inherent inequalities is not always recognized. First, it is believed that the sense of unfairness in envy is not *legitimate* (Heider, 1958). Even researchers, who acknowledge perceived unfairness in the experience of envy, tend to give it a secondary status. As such, injustice perceived during the experience of envy is considered unjust only by subjective standards and not by objective standards (Smith & Kim, 2007; Smith et al., 1994). This is not much different from everyday life, wherein

there is a strong pressure to suppress reactions to inherent inequalities (as is evident in sanctions against admitting or expressing envy). Hence, generally we do not encourage discussions about unfairness of inherent inequalities. Therefore, despite clear violations of fairness standards, inherent inequalities are not consensually viewed as unfair.

### ***Implications for Research on Unfairness in Relative Disadvantage***

The oversight of the unfairness in inherent inequalities has probably limited scholarship in the areas of fairness and relative disadvantage. Although there is no dearth of research on the formation of fairness judgments (Blader, 2007; Van den Bos, Vermunt, & Wilke, 1997), attitudes toward the system of allocation (Ambrose, Hess, & Ganesan, 2007), reactions toward authorities (Van Dijke & De Cremer, 2010), and effects of fairness on performance and cooperation (De Cremer & Tyler, 2005; Zapata-Phelan, Colquitt, Scott, & Livingston, 2009), research on unfairness of luck-based or naturally occurring inequalities has been few and far between.

Furthermore, research that does address unfairness amidst relative disadvantage denotes a restricted conceptualization of fairness. For instance, in a study that tried to distinguish envy from resentment, participants responded to scenarios describing a student with a record of either high or average achievement that followed high or low effort (Feather & Sherman, 2002). Effort served as a proxy for fairness (or deservedness, in this context). There are two problems with this operationalization. First, in this study, low effort (which was a proxy for unfairness) was operationalized as cheating. Thus, unfairness was confounded with unethical behavior, which points to a flawed understanding of unfairness in social inequalities. Equating unfairness with unethical behavior is especially problematic for inherent inequalities, of which luck-based

differences are one good example. It is beyond doubt that a naturally good-looking person did not obtain the good looks via unethical means.

Second, whereas equating unfairness with unethical behavior has its shortcomings, equating fairness with hard work also falls short. In the study just mentioned, high effort (a proxy for fairness) was operationalized as hard work. On the surface, hard work and cheating seem to accurately denote high and low effort, respectively. However, operationalization of fairness via effort in this manner creates the additional factor of responsibility for one's outcomes. A key feature of luck-based differences is the absence of agency—the lucky individual is not responsible in any way.

Therefore, past research on relative disadvantage is not generalizable to the phenomenon of inherent inequalities in general, or luck-based differences in particular. Future research on reactions to social inequalities might benefit from removing agency from the advantaged individual. To this end, the manipulated luck of the target individual in Study 2 offers a novel way to capture the lack of responsibility for one's outcomes.

Another example of isolating responsibility for outcomes in the study of relative disadvantage is offered by Johar and Krizan (2014). In this research, participants provided reactions to relatively advantaged individuals, where the advantage was attributable to external circumstances. Specifically, participants read hypothetical scenarios, wherein their teammate got a higher bonus. Their supervisor who behaved either fairly or unfairly in determining the bonuses took allocation decisions. The researchers found that the blameless teammate received more negative reactions (envy, hostility, and resentment) contingent on actions of the supervisor. Thus, this work

suggests another way to disentangle unfairness from responsibility and immoral or unethical behaviors.

### ***Implications for the Luck-Preference Effect***

Research on the luck preference effect suggests that people tend to prefer lucky individuals: lucky individuals are liked; and people associate good intentions with them (Olson, 2008). My goal was to examine whether the luck preference effect would be observed even in the case of luck-based inferiority. Given the mixed findings regarding perceived luck and social judgments, an easy answer is hard to come by. Whereas individuals sometimes elicited less positive social judgments owing to their luck (Study 1 and 2), in other cases individuals elicited more positive social judgments owing to their luck (Study 3). Therefore, more research is needed as findings do not settle the debate. Next, I discuss limitations of the work and directions for future research, to make better sense of the findings.

### ***Limitations***

It seems that none of the three studies captured the phenomenon of luck-based inferiority where it hurts the most. Across all studies, participants reported extremely low levels of dejection. Therefore, it is not clear whether participants experienced strong relative disadvantage. Relative disadvantage arises when someone's condition is less favorable compared to another party that is better-off (in a self-relevant domain). It seems that the majority of participants did not see their own lives as any less favorable than those of the comparison target, be it a lucky individual in their lives, a "client" in therapy, or the lucky confederate. Given that participants were not necessarily desperate for the



“advantages” that the target had, it makes sense that they were not affected by the fact that those “advantages” were bestowed by luck.

### ***Future Directions***

A future investigation of luck-based inferiority would definitely benefit from employing a stronger sense of relative disadvantage amongst participants. This has implications for all the three studies in this dissertation. In the case of Study 1, it might help to guide participants’ recall of lucky individuals they know. For instance, instead of asking them to think about someone who repeatedly benefits from luck, they should be instructed to think of something that they struggle with in life, but something that someone else they know doesn’t at all. In the case of Study 2, a stronger sense of relative disadvantage could be induced by modifying the “counseling report” read by the participants. It is likely that participants discounted the advantages of the target in Study 2 given that receiving therapy is stigmatized in society. In the case of Study 3, it might help to modify the loser condition. It is likely that participants did not take their loss too seriously given that they did not feel entitled to any of the prizes. However, it might make a difference if they won a couple of the games, but eventually lost everything. Thus, the protocol could be adjusted such that participants feel greater relative disadvantage.

Another direction for future research is to use a more specific measure of luck-attributions, which were inconsistently associated with social judgments. Whereas luck-attributions predicted less positive social judgments in the first two studies, they positively correlated with social judgments in the final study which involved face-to-face interaction. This discrepancy also suggests a potential confusion regarding the psychological meaning of luck. By definition, luck refers to two different things: one’s

favorable circumstances and an external causal force. Some may also confuse luck for the more “even-handed” force of chance (Keren, 1994). In order to better assess luck-attributions, participants could be asked to report attributions of circumstances to “external factors” and to “chance”. They could be asked more directed questions such as whether the target individual has an inherent ability to attract luck.

### ***Conclusion***

The outcomes of even the most deserving and hard-working people are at the mercy of a host of external factors or luck. In so doing, *Lady Luck* is often selective about whom she chooses to favor. Luck-based inferiority deals with this very kind of relative disadvantage: one in which another’s advantage is attributable to external factors such as luck. I hypothesized and found that those who are relatively disadvantaged do not always form positive social judgments of those better-off. Taken together, perceived luck and perceived relative disadvantage predicted less liking and perceived warmth. Moreover, relative advantage predicted lower trust in a behavioral task. However, the observed associations were often weak and in some cases, findings contradicted the hypotheses. Potential limitations suggest that contradicting findings could be a result of methodological limitations such as closeness or similarity to the comparison targets. Although additional research would certainly clarify the role of luck and relative disadvantage, it is clear that luck-based inferiority is important for social judgments.

## REFERENCES

- Abramson, L. Y., Seligman, M., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49-74.
- André, N. (2006). Good fortune, luck, opportunity and their lack: How do agents perceive them? *Personality and Individual Differences, 40*, 1461–1472.
- Arneson, R. (1989). Equality and Equal Opportunity for Welfare. *Philosophical Studies, 56*, 77–93.
- Arneson, R. (2000). Luck Egalitarianism and Prioritarianism. *Ethics, 110*, 339–49.
- Beach, S. R. H., & Tesser, A. (1995). Self-esteem and the extended self-evaluation maintenance model: The self in social context. In M. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp.145-170). New York: Plenum Press.
- Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior, 10*, 122–142.
- Brickman, P., & Bulman, R. J. (1977). Pleasure and pain in social comparison. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 149-186). Washington, DC: Hemisphere.
- Bridgstock, M., Marais, I., & Sturges, K. (2011). The structure of superstitious action—A further analysis of fresh evidence. *Personality and Individual Differences, 50*, 795–798.
- Cacioppo, J. T., Gardner, W. L., & Bernston, G. G. (1997). Beyond bipolar conceptualizations and measures: The case of attitudes and evaluative space. *Personality and Social Psychology Review, 1*, 3-25.

- Cialdini, R. B., & Richardson, K. D. (1980). Two indirect tactics of image management: Basking and blasting. *Journal of Personality and Social Psychology*, *89*, 406-415.
- Cohen, G. A. (1989). On the Currency of Egalitarian Justice. *Ethics*, *99*, 906–44.
- Cohen, G. A. (2000). *If You're an Egalitarian, How Come You're so Rich?* Cambridge, MA: Harvard University Press.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Second Edition. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Cohen-Charash, Y., & Mueller, J. S. (2007). Does perceived unfairness exacerbate or mitigate interpersonal counterproductive work behaviors related to envy? *Journal of Applied Psychology*, *92*, 666-680.
- Cox, C. (1922). *Listen To This*. San Francisco, CA: Coleman Cox Publishing Company.
- Crosby, F. (1976). A model of egotistical relative deprivation. *Psychological Review*, *83*, 85-113.
- Darke, P. R., & Freedman, J. L. (1997a). Lucky events and beliefs in luck: Paradoxical effects on confidence and risk-taking. *Personality and Social Psychology Bulletin*, *23*, 378–388.
- Darke, P. R., & Freedman, J. L. (1997b). The belief in good luck scale. *Journal of Research in Personality*, *31*, 486–511.
- Day, L., & Maltby, J. (2003). Belief in good luck and psychological wellbeing: The mediating role of optimism and irrational beliefs. *Journal of Psychology*, *137*, 99–110.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268.

- DeHouwer, J., Thomas, S., & Baeyens, F. (2001). Associative learning of likes and dislikes: A review of 25 years of research on human evaluative conditioning. *Psychological Bulletin, 127*, 853-869.
- Dworkin, R. (2003). Equality, Luck, and Hierarchy. *Philosophy and Public Affairs, 31*, 190-8.
- Elster, J. (1998). *Alchemies of the mind: Rationality and the emotions*. Cambridge, United Kingdom: Cambridge University Press.
- Feather, N. T. (1999). Judgments of deservingness: Studies in the psychology of justice and achievement. *Personality and Social Psychology Review, 3*, 86-107.
- Feather, N. T., & Sherman, R. (2002). Envy, resentment, schadenfreude, and sympathy: Reactions to deserved and undeserved achievement and subsequent failure. *Personality and Social Psychology Bulletin, 28*, 953-961.
- Festinger, L. (1954). A theory of social comparison. *Human Relations, 7*, 117-140.
- Fiske, S.T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878-902.
- Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social perception: warmth and competence. *Trends in Cognitive Science, 11*, 77-83.
- Folger, R. (1987). Reformulating the preconditions of resentment: A referent cognitions model. In J. C. Masters & W. P. Smith (Eds.), *Social comparison, social justice and relative deprivation: Theoretical, empirical and policy perspectives* (pp. 183-215). Hillsdale, NJ: Lawrence Erlbaum.

Forsyth, D. R. (2006). *Group Dynamics* (5th Ed.) (pp. 388 - 389) Belmont, CA: Cengage Learning.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: John Wiley & Sons.

Hofmann, W., De Houwer, J., Perugini, M., Baeyens, F., & Crombez, G. (2010). Evaluative conditioning in humans: A meta-analysis. *Psychological Bulletin*, 136, 390-421.

Hurwitz, M. (2011). The impact of legacy status on undergraduate admissions at elite colleges and universities. *Economics of Education Review*, 30, 480-492.

Jeffreys, K. (2005). Characteristics of Diversity Legal Permanent Residents: 2004.

Retrieved September 14, 2013, from:

<http://www.dhs.gov/xlibrary/assets/statistics/publications/FSDiversityLPR2004.pdf>

Johar, O., & Krizan, Z. (Under review). Envy thwarts basic human needs.

Johar, O., & Krizan, Z. (2014). *Procedural Fairness Buffers Negative Interpersonal Reactions*. Unpublished manuscript. Iowa State University, Ames, Iowa.

Judd, C. M., Hawkins, L. J., & Yzerbyt, V., Kashima, Y. (2005). Fundamental dimensions of social judgment: Understanding the relations between judgments of competence and warmth. *Journal of Personality and Social Psychology*, 89, 899-913.

Krizan, Z., & Johar, O. (2012). Envy divides the two faces of narcissism. *Journal of Personality*, 80, 1415-1451.

- Leach, C. W., & Spears, R. (2008). "A vengefulness of the impotent": The pain of in-group inferiority and schadenfreude toward successful out-groups. *Journal of Personality and Social Psychology, 95*, 1383-1396.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 32, pp. 1-62). San Diego, CA: Academic Press.
- Locke, K. D., & Nekich, J. C. (2000). Agency and communion in naturalistic social comparison. *Personality and Social Psychology Bulletin, 26*, 864-74.
- Lount, R. B., Jr. (2010). The impact of positive mood on trust in interpersonal and intergroup interactions. *Journal of Personality and Social Psychology, 98*, 420-433.
- Luck (n.d.). In *Merriam-Webster's online dictionary*. Retrieved July 30, 2013, from <http://www.merriam-webster.com/dictionary/luck>
- Maltby, J., Day, L., Gill, P., Colley, A., & Wood, A. M. (2008). Beliefs around luck: Confirming the empirical conceptualization of beliefs around luck and the development of the Darke and Freedman beliefs around luck scale. *Personality and Individual Differences, 45*, 655-660.
- Martin, J. (1986a). The tolerance of injustice. In J. Olson, C. P. Herman, & M. Zanna (Eds.), *Relative deprivation and social comparison: The Ontario symposium* (pp. 217-242). Hillsdale, NJ: Lawrence Erlbaum.
- Morse, S., & Gergen, K. J. (1970). Social comparison, self-consistency, and the concept of self. *Journal of Personality and Social Psychology, 16*, 148-156.

- Muller, D., & Butera, F. (2007). The focusing effect of self-evaluation threat in coaction and social comparison. *Journal of Personality and Social Psychology, 93*, 194-211.
- Muller, D., Judd, C.M., & Yzerbyt, V.Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*, 852-863.
- Nagel, T. (1979). *Moral Questions*. Cambridge: Cambridge University Press.
- Olson, K. R. (2008). *The Luck Preference: Investigations Across Culture and Development* (Doctoral Dissertation). Retrieved from Dissertations and Theses database. (UMI No. 3312474).
- Olson, K. R., Banaji, M. R., Dweck, C. S., & Spelke, E. S. (2006). Children's biased evaluations of lucky versus unlucky people and their social groups. *Psychological Science, 17*, 845-846.
- Olson, K.R., Dunham, Y., Banaji, M. R., Spelke, E.S., & Dweck, C. S. (2008). Judging the unlucky and contagion of those judgments. *Journal of Personality and Social Psychology, 94*, 757-776.
- Parrott, W. G. (1991). The emotional experiences of envy and jealousy. In P. Salovey (Ed.), *The psychology of jealousy and envy* (pp. 3-30). New York: Guilford.
- Runciman, W. G. (1966). *Relative deprivation and social justice*. London, UK: Routledge Kegan Paul.
- Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology, 47*, 780-792.



- Schaubroeck, J., & Lam, S. K. (2004). Comparing lots before and after: Promotion rejectees' invidious reactions to promotees. *Organizational Behavior and Human Decision Processes*, *94*, 33–47.
- Schoeck, H. (1969). *Envy: A theory of social behavior*. New York: Harcourt, Brace, and World.
- Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What's satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, *80*, 325–339.
- Smith, H. J., Pettigrew, T. F., Pippin, G. M., & Bialosiewicz, S. (2012). Relative deprivation: a theoretical and meta-analytic review. *Personality and social Psychology Review*, *16*, 203-232.
- Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp.173 -200). New York: Plenum.
- Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin*, *133*, 46-64.
- Smith, R. H., Turner, T., Leach, C. W., Garonzik, R., Urch-Druskat, V., & Weston, C. M. (1996). Envy and *schadenfreude*. *Personality and Social Psychology Bulletin*, *22*, 158–168.
- Soderberg, C. K., & Sherman, J. W. (2013). No face is an island: How implicit bias operates in social scenes. *Journal of Experimental Social Psychology*, *49*, 307-313.

- Stapel, D. A., & Tesser, A. (2001). Self-activation increases social comparison. *Journal of Personality and Social Psychology, 81*, 742-750.
- Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181-227). New York: Academic Press.
- Tesser, A. (1991). Emotion in social comparison and reflection processes. In J. M. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 115–145). Hillsdale, NJ: Erlbaum.
- Tesser, A., & Smilh, J. (1980). Some effects of friendship and task relevance on helping: You don't always, help the one you like. *Journal of Experimental Social Psychology, 16*, 582-590.
- Thompson, E. R., & Prendergast, G. P. (2012). Belief in luck and luckiness: Conceptual clarification and new measure validation. *Personality and Individual Differences, 54*, 501-506.
- Tobacyk, J. (1988). *A Revised Paranormal Belief Scale*. Unpublished manuscript. Louisiana Tech University, Rushton, LA.
- Tobacyk, J., & Milford, G. (1983). Belief in paranormal phenomena: Assessment instrument development and implications for personality functioning. *Journal of Personality and Social Psychology, 44*, 1029-1037.
- Todd, A. R., & Burgmer, P. (2013). Perspective taking and automatic intergroup evaluation change: Testing an associative self-anchoring account. *Journal of Personality and Social Psychology, 104*, 786-802.

- Tyler, T. R. (2000). Social justice: Outcome and procedure. *International Journal of Psychology, 35*, 117-125.
- Van de Ven, N., Zeelenberg, M., & Pieters, R. (2009). Leveling up and down: The experience of benign and malicious envy. *Emotion, 9*, 419-429.
- Van den Bos, K. (2007). Hot cognition and social justice judgments: The combined influence of cognitive and affective factors on the justice judgment process. In D. De Cremer (Ed.), *Advances in the psychology of justice and affect* (pp. 59-82). Greenwich, CT: Information Age Publishing.
- Van den Bos, K., Miedema, J., Vermunt, R., & Zwenk, F. (2011). A self-activation hypothesis of affective reactions to fair and unfair events: Evidence for supraliminal and subliminal processes. *Social Justice Research, 24*, 6-24.
- Walker, I., & Pettigrew, T. F. (1984). Relative deprivation theory: An overview and conceptual critique. *British Journal of Social Psychology, 23*, 301-310.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York: Simon & Schuster.
- Weiner, B. (2005). *Social Motivation, Justice, And The Moral Emotions: An Attributional Approach*. Lawrence Erlbaum Associates
- Williams, B. (1981). *Moral Luck*. Cambridge: Cambridge University Press.
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin, 90*, 245-271.
- Wiseman, R. (2003). *The Luck Factor*. London, UK: Random House.
- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin, 106*, 231-248.

Zipursky, B. C. (2008). Two dimensions of responsibility in crime, tort, and moral luck.

Theoretical Inquiries in Law, 9 available at:

<http://www.bepress.com/til/default/vol9/iss1/art4>.

Zizzo, D. J., & Oswald, A. (2001). Are people willing to pay to reduce others' incomes?

*Annales d'Economie et de Statistique*, July/December, 39–65.

**APPENDIX A: STUDY 1 REACTIONS TOWARD THE LUCKY INDIVIDUAL**Emotional Reactions questionnaire

You just described a person you know. Now, please take a moment to think about the emotions you experience toward this person, in general. Given below are certain emotional reactions that you might have experienced. Some of them might be feelings directed toward the person. Please indicate how you feel, by selecting the appropriate response for each reaction listed below.

0	1	2	3	4	5	6	7	8	9	10	11
<b>None At All</b>						<b>Great Amount</b>					
1. ____	Cold toward	9. ____	Liking for	17. ____	Proud of	25. ____	Inspired by				
					yourself						
2. ____	Envious of	10. ____	Hostile	18. ____	Warm	26. ____	Contempt				
					respect for		for				
3. ____	Jealous of	11. ____	Frustrated by	19. ____	Longing	27. ____	Ashamed				
4. ____	Annoyed by	12. ____	Disgusted by	20. ____	Admiring	28. ____	Pity for				
5. ____	Sympathy for	13. ____	Indignant	21. ____	Compassion	29. ____	Depressed				
			toward								
6. ____	Inferior to	14. ____	Happy for	22. ____	Self-lacking	30. ____	Pleased				
							for				
7. ____	Resentful	15. ____	Grudge	23. ____	Superior to	31. ____	Disrespect				
			against				for				
8. ____	High regard	16. ____	Angry at	24. ____	Competitive	32. ____	Resentful				
	for						envy toward				

Note: Items 6, 22, 27, and 29 were used to measure dejection

Attributions

If you had to explain the circumstances of the lucky individual you just described, how important do you think was each of the following factors? Please circle your response by using the following scale

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Not at all			Very much	

**Their level of ability or talent:**      1      2      3      4      5

**Their level of effort:**                      1      2      3      4      5

**Sheer Luck:**                                      1      2      3      4      5

Personality Impressions

Please give your impression of the lucky individual you described on the following traits by selecting a number on the scale below that best fits your view and then entering it in the space next to each item. Some of these questions might be hard, but please try your best.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>None At All</b>											<b>Great Amount</b>

- |                    |                        |                       |
|--------------------|------------------------|-----------------------|
| 1. ____ Likeable   | 8. ____ Trustworthy    | 15. ____ Mediocre     |
| 2. ____ Arrogant   | 9. ____ Confident      | 16. ____ Poised       |
| 3. ____ Selfish    | 10. ____ Self-Centered | 17. ____ Fortunate    |
| 4. ____ Friendly   | 11. ____ Conceited     | 18. ____ Ethical      |
| 5. ____ Genuine    | 12. ____ Dishonest     | 19. ____ Lucky        |
| 6. ____ Gifted     | 13. ____ Intelligent   | 20. ____ Deserving    |
| 7. ____ Advantaged | 14. ____ Moral         | 21. ____ Hard-working |

## APPENDIX B: STUDY 2 REACTIONS TOWARD THE “CLIENT” IN THERAPY

Mood Control Measure

Please indicate how you are feeling toward the client in the counseling report by selecting a number on the scale below that best fits your feelings and then entering it in the space next to each item.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>None At All</b>						<b>Great Amount</b>					
1. ____	Cold toward	9. ____	Liking for	17. ____	Proud of yourself	25. ____	Inspired by				
2. ____	Envious of	10. ____	Hostile	18. ____	Warm respect for	26. ____	Contempt for				
3. ____	Jealous of	11. ____	Frustrated by	19. ____	Longing	27. ____	Ashamed				
4. ____	Annoyed by	12. ____	Disgusted by	20. ____	Admiring	28. ____	Pity for				
5. ____	Sympathy for	13. ____	Indignant toward	21. ____	Compassion	29. ____	Depressed				
6. ____	Inferior to	14. ____	Happy for	22. ____	Self-lacking	30. ____	Pleased for				
7. ____	Resentful	15. ____	Grudge against	23. ____	Superior to	31. ____	Disrespect for				
8. ____	High regard for	16. ____	Angry at	24. ____	Competitive	32. ____	Resentful envy toward				

Note: Items 6, 22, 27, and 29 were used to measure dejection

Interpersonal Understanding

If you had to explain the life of the person in the counseling report, how important do you think was each of the following factors. Please circle your response by using the following scale

**1**
**2**
**3**
**4**
**5**  
Not at all
Very much

- Their level of ability or talent:**     1     2     3     4     5
- Their level of effort:**                  1     2     3     4     5
- Sheer Luck:**                                  1     2     3     4     5

Personality Impressions

Please give your impression of the client in the counseling report on the following traits by selecting a number on the scale below that best fits your view and then entering it in the space next to each item. Some of these questions might be hard, but please try your best.

**0**
**1**
**2**
**3**
**4**
**5**
**6**
**7**
**8**
**9**
**10**
**11**  
**None At All**
**Great Amount**

- |                 |                       |                     |
|-----------------|-----------------------|---------------------|
| 1. ___ Likeable | 8. ___ Advantaged     | 15. ___ Intelligent |
| 2. ___ Arrogant | 9. ___ Trustworthy    | 16. ___ Moral       |
| 3. ___ Selfish  | 10. ___ Confident     | 17. ___ Mediocre    |
| 4. ___ Friendly | 11. ___ Self-Centered | 18. ___ Poised      |
| 5. ___ Genuine  | 12. ___ Conceited     | 19. ___ Fortunate   |
| 6. ___ Gifted   | 13. ___ Dishonest     | 20. ___ Ethical     |
| 7. ___ Lucky    | 14. ___ Hard-working  | 21. ___ Deserving   |



## APPENDIX C: REACTIONS TOWARD THE LUCKY INDIVIDUAL

Interpersonal Understanding

## Understanding of Life Circumstances

If you had to explain the victory of the contestant, how important do you think was each of the following factors. Please circle your response by using the following scale

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Not at all			Very much	

**Their level of ability or talent:**     1     2     3     4     5

**Their level of effort:**                    1     2     3     4     5

**Sheer Luck:**                                 1     2     3     4     5

Personality Impressions

Please give your impression of the contestant on the following traits by selecting a number on the scale below that best fits your view and then entering it in the space next to each item. Some of these questions might be hard, but please try your best.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
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None At All

Great Amount

- |                  |                        |                      |
|------------------|------------------------|----------------------|
| 1. ____ Likeable | 8. ____ Advantaged     | 15. ____ Intelligent |
| 2. ____ Arrogant | 9. ____ Trustworthy    | 16. ____ Moral       |
| 3. ____ Selfish  | 10. ____ Confident     | 17. ____ Mediocre    |
| 4. ____ Friendly | 11. ____ Self-Centered | 18. ____ Poised      |
| 5. ____ Genuine  | 12. ____ Conceited     | 19. ____ Fortunate   |
| 6. ____ Gifted   | 13. ____ Dishonest     | 20. ____ Ethical     |
| 7. ____ Lucky    | 14. ____ Hard-working  | 21. ____ Deserving   |

Mood Control Measure

Please indicate how you are feeling toward the your co-participant by selecting a number on the scale below that best fits your feelings and then entering it in the space next to each item.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>None At All</b>						<b>Great Amount</b>					
1. ____	Cold toward	9. ____	Liking for	17. ____	Proud of	25. ____	Inspired by				
					yourself						
2. ____	Envious of	10. ____	Hostile	18. ____	Warm	26. ____	Contempt				
					respect for		for				
3. ____	Jealous of	11. ____	Frustrated by	19. ____	Longing	27. ____	Ashamed				
4. ____	Annoyed by	12. ____	Disgusted by	20. ____	Admiring	28. ____	Pity for				
5. ____	Sympathy for	13. ____	Indignant	21. ____	Compassion	29. ____	Depressed				
			toward								
6. ____	Inferior to	14. ____	Happy for	22. ____	Self-lacking	30. ____	Pleased				
							for				
7. ____	Resentful	15. ____	Grudge	23. ____	Superior to	31. ____	Disrespect				
			against				for				
8. ____	High regard	16. ____	Angry at	24. ____	Competitive	32. ____	Resentful				
	for						envy toward				

Note: Items 6, 22, 27, and 29 were used to measure dejection

## APPENDIX D: LUCK-BELIEF SCALES

The rest of this questionnaire is about you. Please respond to all questions after reading carefully. Your honesty is appreciated.

Beliefs in Luck and Luckiness Scale (BILLS)

Please rate the extent to which you agree with the following statements. Choose an appropriate number from 1 (Strongly disagree) to 5 (Strongly agree), and write it before each item.

- \_\_\_ 1. I believe in good and bad luck
- \_\_\_ 2. I try hard to be nice
- \_\_\_ 3. I mostly have bad luck
- \_\_\_ 4. There is no such thing as good or bad luck
- \_\_\_ 5. It's hard to be nice
- \_\_\_ 6. I'm not lucky
- \_\_\_ 7. Good and bad luck really do exist
- \_\_\_ 8. I generally have good luck
- \_\_\_ 9. I'm nice if I try
- \_\_\_ 10. Luck doesn't affect what happens to me
- \_\_\_ 11. I consider myself a lucky person
- \_\_\_ 12. Belief in luck is completely sensible
- \_\_\_ 13. It's nice to try hard
- \_\_\_ 14. Bad luck happens to me often
- \_\_\_ 15. Luck only exists in peoples' minds
- \_\_\_ 16. I'm usually lucky

Darke & Freedman Belief Around Luck Scale (DFBALS)

Please rate the extent to which you agree with the following statements. Choose an appropriate number from 1 (Strongly disagree) to 6 (Strongly agree), and write it before each item.

- \_\_\_ 1 I consider myself to be an unlucky person
- \_\_\_ 2 I consistently have bad luck
- \_\_\_ 3 Even the things in life I can control in life don't go my way because I am unlucky
- \_\_\_ 4 Luck works against me
- \_\_\_ 5 I often feel like it's my unlucky day
- \_\_\_ 6 I mind leaving things to chance because I am an unlucky person
- \_\_\_ 7 Even the things in life I can't control tend to go my way because I'm lucky
- \_\_\_ 8 I consistently have good luck
- \_\_\_ 9 I often feel like it's my lucky day
- \_\_\_ 10 Luck works in my favor
- \_\_\_ 11 I consider myself to be a lucky person
- \_\_\_ 12 I don't mind leaving things to chance because I'm a lucky person
- \_\_\_ 13 It's a mistake to base any decisions on how unlucky you feel
- \_\_\_ 14 Being unlucky is nothing more than random
- \_\_\_ 15 It's a mistake to base any decisions on how lucky you feel
- \_\_\_ 16 Being lucky is nothing more than random
- \_\_\_ 17 Some people are consistently lucky, and others are unlucky
- \_\_\_ 18 Some people are consistently unlucky, and others are lucky
- \_\_\_ 19 There is such a thing as good luck that favors some people, but not others
- \_\_\_ 20 There is such a thing as bad luck that affects some people more than others
- \_\_\_ 21 Luck plays an important part in everyone's life
- \_\_\_ 22 I believe in Luck

Belief In Good Luck Scale (BIGL)

Please rate the extent to which you agree with the following statements. Choose an appropriate number from 1 (Strongly disagree) to 6 (Strongly agree), and write it before each item.

- \_\_\_ 1. Luck plays an important part in everyone's life
- \_\_\_ 2. Some people are consistently lucky, and others are unlucky.
- \_\_\_ 3. I consider myself to be a lucky person.
- \_\_\_ 4. I believe in luck.
- \_\_\_ 5. I often feel like it's my lucky day.
- \_\_\_ 6. I consistently have good luck.
- \_\_\_ 7. It's a mistake to base any decisions on how lucky you feel.
- \_\_\_ 8. Luck works in my favor.
- \_\_\_ 9. I don't mind leaving things to chance because I'm a lucky person.
- \_\_\_ 10. Even the things in life I can't control tend to go my way because I'm lucky.
- \_\_\_ 11. There is such a thing as luck that favors some people, but not others.
- \_\_\_ 12. Luck is nothing more than random chance.