

Signaling benefits of partner choice decisions

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Abstract

When deciding whom to choose for a cooperative interaction, two features of prospective partners are especially relevant: Ability to provide benefits, and willingness to provide those benefits. Often, these traits are correlated. But, when ability and willingness are in conflict, people often value willingness over ability, even when doing so results in immediate losses. Here, we explore one way of explaining this seemingly irrational choice, demonstrating that those who choose willing partners over able partners gain reputational and cooperative benefits themselves. In Part I, we show that choosing a willing over an able partner affords one a moral reputation, makes one more likely to be chosen as a cooperation partner, and adheres to expectations for how a moral person will behave. In fact, even people who choose an able over a willing partner for themselves prefer others who choose a willing over an able partner. Crucial to our hypothesis, we find that valuing willingness over ability is an honest signal of generosity. In Part II, we explore moderators of this effect. We demonstrate that people are generally aware of what they are signaling via their choice of partner, although at times they make important mispredictions, and that they are influenced by prevailing norms favoring the prioritization of willingness versus ability. These findings provide the first extensive exploration of the signaling benefits of partner choice decisions. Furthermore, they provide one explanation for why we choose those who are willing over those who are able, even at a cost to ourselves: By doing so, we in turn look like good potential partners.

Keywords: signaling; partner choice; cooperation; morality; evolution

Introduction

Humans are a remarkably cooperative species, interacting with distant others and non-kin. The success of these cooperative interactions is an area of active interest (Boyd & Richerson, 1992, 2005; Henrich, 2015; Henrich & Henrich, 2007; Richerson & Boyd, 2005; Richerson & Boyd, 1998). One mechanism for building and maintaining cooperative interactions is partner choice: We choose the best partners and avoid those who are bad (Bull & Rice, 1999; Baumard, Andre, Sperber, 2013; Barclay, 2016; Barclay & Willer, 2007; Fu, Hauert, Nowak, & Wang, 2008; Noë & Hammerstein, 1994; for a review see Martin, Young, & McAuliffe, 2019). Often, the best partner is someone who is *able* to deliver resources or benefits. However, individuals sometimes choose to forgo partnering with able individuals and instead partner with those who are most *willing* to provide benefits, even when this choice carries an immediate cost (Barclay, 2016; Eisenbruch & Roney, 2017; Hackel, Doll, & Amodio, 2015; Macfarlan & Lyle, 2015; Raihani & Barclay, 2016). What explains this seemingly irrational choice? We provide one explanation: Such decisions carry signaling benefits.

Preferences for *able* partners (i.e. a partner who possesses valued personal traits—such as wealth, health or high status in other forms—which grant the ability to benefit others) are found across both large- and small-scale societies, where people who exhibit the ability to deliver benefits receive both social and material benefits in return (Eisenbruch & Roney, 2017; Eisenbruch, Grillot, Maestriperi, & Roney, 2016; Gurven, Allen-Arave, Hill, & Hurtado, 2000; Macfarlan & Lyle, 2015). For example, those who signal their wealth through conspicuous consumption are more likely to be hired and obeyed (Nelissen & Meijers, 2011), and men with higher earning capacity are more likely to be chosen as a romantic partner by women (Buss, 1989). Those who appear healthy are more likely to be trusted (Krupp, DeBruine, & Jones,

2011), and those who are skilled are more likely to receive deference (Henrich & Gil-White, 2001). Preferences for ability extend to other species as well, with both rats and fish preferring to cooperate with able others (Vail, Manica, & Bshary, 2014; Dolivo & Taborsky, 2015).

At the same time, exhibiting a *willingness* to cooperate (i.e. actual or expressed willingness to reciprocate or participate in mutually beneficial endeavors) also affords many social and material benefits. In hunter-gatherer populations, generous hunters are favoured as hunting partners, often over the most skillful hunters (Bird & Power, 2015; Bird, Scelza, Bird, & Smith, 2012). In agriculturalist societies, those who are seen as more cooperative also tend to have a greater number of social connections (Lyle & Smith, 2014; Macfarlan, Quinlan, & Remiker, 2013; Macfarlan, Remiker, & Quinlan, 2012). In online markets, sellers with a reputation of being honest are more likely to be patronized over those who lack such a moral reputation (Diekmann, Jann, & Przepiorka, 2014). In economic games, many people prefer to partner with those who previously behaved fairly (Hackel, Doll, & Amodio, 2015; Raihani & Barclay, 2016). And, when comparing preferences for friends (Vigil, 2007), employment opportunities and work teams (van Prooijen & Ellemers, 2014), roommates, business partners, and romantic partners (Kafashan, 2017), a high level of willingness is valued more than a high level of ability. This valuing of willingness also extends to other species, with both chimpanzees and certain bird species showing a preference to cooperate with those who are altruistic (Russell & Dunbar, 2005; Zahavi & Zahavi, 1997; but see Wright, 1997).

It is perhaps not surprising that people value both ability (e.g. wealth) and willingness (e.g. generosity) when choosing a cooperation partner. What may be more surprising is that, when forced to make a choice between ability and willingness, some people forgo the opportunity to partner with an able partner in favor of a partner who appears more willing, even

when they know they will likely benefit more, in material terms, from partnering with the able partner (Barclay, 2016; Eisenbruch & Roney, 2017; Hackel, Doll, & Amodio, 2015; Macfarlan & Lyle, 2015; Raihani & Barclay, 2016). For example, across such research a large proportion of participants chose to partner with those who give a larger share of what they have rather than those who give more in absolute terms (but a smaller share of what they have). Why would people choose willing partners when the expected economic payoff of choosing able, able partners is greater? This behaviour is even more puzzling given that generosity appears to be an unstable trait within an individual (although perhaps more stable than ability; Eisenbruch & Krasnow, 2019) that also varies greatly depending upon the social context (Smith, Larroucau, Mabulla, & Apicella, 2018; but see, Peysakhovich, Nowak, & Rand, 2014). Thus, not only is the expected payoff less if one chooses a willing partner, but one cannot even be certain that a willing partner will continue to act willingly in future interactions.

Costly Signaling Theory

In attempting to provide one explanation for why people make the costly decision to value willing over able partners, we consider an ultimate explanation for such preferences. In particular, we investigate what is being signalled when one chooses a particular partner. We posit that the costly decision to partner with someone who can provide less (i.e. a willing but less able partner) signals that the chooser is of sufficient moral quality to bear the cost of not partnering with the able partner (Barclay & Reeve, 2012; Getty, 2006; Gintis, Smith, & Bowles, 2001; Grafen, 1990; Szamado, 2012; Zahavi, 1975). That is, the chooser gains a reputation as a moral individual, one who values generosity and is themselves generous. Because of this reputation, short-term costs are recouped by being subsequently chosen more often by others (especially by others who are also more generous) as a cooperation partner, thereby gaining the various fitness

benefits of social connection. In the long run, these social (and associated material) benefits could offset the cost of not partnering with the able partner.

Why should choosing a willing over an able partner signal moral goodness? Costly signaling theory posits that the action producing the signal has to be differentially costly for different types of individuals; the variance in costliness is what allows for it to serve as a signal (Gintis, Smith, & Bowles, 2001; Grafen, 1990; Roberts, 1998; Zahavi, 1975). As such, we posit that it is because choosing willing partners should be less costly in the long run for moral individuals. This builds upon theorizing and game theoretic modeling that puts forth a similar explanation for why third-party punishing serves as a costly signal of moral character (Jordan, Hoffman, Bloom, & Rand, 2016; Jordan & Rand, 2017). To provide support for this conceptual model, in the following studies, we experimentally examine whether those who choose willing partners actually behave more generously. If costly signaling theory provides one explanation for the tendency to value willingness over ability when selecting partners, we would expect a tendency to choose willing partners to be linked to one's own generosity. In short, we examine the following questions: First, why do people choose to partner with willing over able partners? We predict that this choice increases the likelihood that these individuals are chosen as a partner by others. Second, why do people choose those who choose willing partners? We predict that it is because those who choose willing partners are also more generous.

It should be noted that we are not examining the reputation that is derived from selecting someone for a specific duty, such as hiring an employee for a certain job, where the chooser has a mandate to select the most qualified individual (Behling, 1998; Barrick & Mount, 1991). Instead, we examine the act of choosing a partner for a cooperative interaction. Although we explore this question within the specific context of a Dictator Game, other examples may include choosing to

partner with a more helpful versus more skillful fellow employee on a team project, choosing to partner with a more generous versus more rich business partner on a business deal, choosing to become friends with a more caring versus more popular colleague at work, or choosing to partner with a more committed versus more attractive romantic partner.

Contribution to other Theories

This investigation complements recent research, using agent-based models, proposing that the valuing of willingness is due in part to the asymmetry in the distribution of traits associated with ability and willingness within a population (Eisenbruch & Krasnow, 2019). Research suggests that throughout human evolution greater variance has existed across individuals in traits that indicate one's willingness, such as generosity, fairness, and selflessness (Aktipis et al., 2018; Daly & Wilson, 1988; Pinker, 2011) than traits that indicate one's ability, such as skills and productivity (Hill & Kintigh, 2009; McElreath & Koster, 2014; Yellen, 1977). As a result, choosing someone low in willingness would have carried greater risk (i.e. they could be more selfish than average, or perhaps even harmful) than choosing someone low in ability (i.e. they could be only marginally less able than average). Due to this asymmetric risk structure, selection would have favored caring more about another individual's level of willingness than their ability. In the present research, we investigate an additional selection pressure, namely, that by choosing a partner based on their level of willingness, the chooser in turn is more likely to be chosen as an interaction partner.

Our hypothesis may also align with predictions from contagion theory (Rozin, Millman, Nemeroff, 1986) and stigma by association theory (Neuberg, Smith, Hoffman, & Russell, 1994). Research on contagion has shown that people desire objects that are associated with admired individuals (Newman, Diesendruck, & Bloom, 2011) and dislike objects that are associated

despised individuals (Rozin, Millman, Nemeroff, 1986). In the present research, we explore whether people desire other *people* that are associated with willing others, which may be construed as a contagion effect occurring between the chooser and the willing other. Research on stigma by association has shown that when a non-stigmatized individual is associated with a stigmatized individual, the stigma transfers to the previously non-stigmatized individual (Neuberg, Smith, Hoffman, & Russell, 1994). Here we explore whether people who choose to partner with able yet stingy partners are in turn viewed less favorably by observers.

Our investigation also contributes to foundational findings in social psychology showing that people bask in the reflected glory of successful others (e.g., Cialdini et al., 1976; Cialdini & Ableardson, 1980), make efforts to avoid being associated with odious others (Cooper & Jones, 1969), and experience guilt as a result of being associated with a group that has a negative history (Doosje, Branscombe, Spears, & Manstead, 1998). Relatedly, people expect to be judged negatively, and feel heightened levels of embarrassment, when their friends violate social norms (Fortune & Newby-Clark, 2008). Social closeness appears to moderate this effect, with people feeling higher levels of embarrassment and greater expectations of being perceived negatively when a close other (versus a distant other) violates a social norm. This finding is reflected in neural results showing that when witnessing a close other (versus a distant other) violate social norms people exhibited heightened levels of activation in areas associated with aversive affect, such as the anterior insula and anterior cingulate cortex, as well as areas associated with self-related thoughts such as the precuneus (Muller-Pinzler, Rademacher, Paulus, & Krach, 2015). We build upon such research by examining how people are actually evaluated as a result of their partner choices.

Constructs of Interest

We operationalized a willing partner as one who is relatively poor yet relatively generous, and an able partner as one who is relatively rich yet relatively selfish (Raihani & Barclay, 2016). This comparison between willingness and ability follows previous research across various contexts that contrasts these two dimensions (Barclay, 2013, 2016; Cosmides, Guzman, & Tooby, 2019; Gangestad & Simpson, 2000; Katona, 1968; Macfarlane & Lyle, 2015; Martin, Seta, & Crelia, 1990; Raihani & Barclay, 2016; Smith & Apicella, 2019; Vigil, 2007; Zарbatany, Conley, & Pepper, 2004). With that said, this comparison does relate to broader distinctions in social and personality psychology between agency/competence and communion/warmth (Abele, Cuddy, Judd, & Yzerbyt, 2008; Abele & Wojciszke, 2007; Digman, 1997; Fiske, 2012; Fiske, Cuddy, & Glick, 2007; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005; Wiggins, 1991). We view ability and willingness as traits that fit within these broader frameworks. Notably, we do not operationalize ability as possessing any intrinsic skill, such as being intelligent. Instead, ability in our studies strictly implies being *able* to provide benefits to others via material resources, and willingness implies being *willing* to provide benefits to others via material resources, both within the specific context at hand.

Although we focus exclusively on willingness versus ability, the reputational effects we explore are wide-ranging. We focus mainly on the three primary dimensions that are explored in person-perception research (i.e., morality, warmth, and competence), with a particular emphasis on morality (Brambilla, Rusconi, Sacchi, & Cherubini, 2011; Brambilla, Sacchi, Rusconi, Cherubini, & Yzerbyt, 2012; Goodwin, Piazza, & Rozin, 2014; Leach, Ellemers, & Barreto, 2007), but we also explore perceived emotionality and rationality (Epstein, Pacini, Denes-Raj, Heier, 1996). We hypothesize that those who choose willing over able partners will be perceived as more moral by observers. As explained, this hypothesis is derived from costly signaling theory

(Gintis, Smith, & Bowles, 2001; Grafen, 1990; Roberts, 1998; Zahavi, 1975), which we utilize as a possible ultimate explanation for the partner choices we find in our experiments. Of course, other proximate explanations could be applied to describe the signaling effect of partnering, such as contagion or stigma by association occurring between the chooser and the chosen partner. But such explanations simply push the question back to why contagion or stigma by association should occur. We therefore propose an ultimate explanation for this phenomenon.

Overview of Studies

We divide our results into two parts. In Part I (Studies 1-4), we examine our primary topic of interest, namely, the evaluations people make about those who choose willing versus able partners. In Studies 1 and 2, we ask whether those who choose willing over able partners are in turn more likely to be chosen themselves as cooperation partners; in Study 1, we also examine inferences about the chooser's trustworthiness and morality (Brambilla & Leach, 2014; Goodwin, Piazza, & Rozin, 2014), warmth and competence (Judd, James-Hawkins, Yzerbyt, & Kashima, 2005), emotionality and logical ability (Epstein, Pacini, Denes-Raj, Heier, 1996). Each of these inferences contributes to an overall moral evaluation of an individual. In addition to asking participants to make inferences about the moral character of choosers, we also reverse the experimental logic in Study 3 and ask participants to predict who a morally good versus a morally bad individual would choose as a partner. This approach allows us to examine whether people have preconceived notions of how a moral agent (versus an immoral agent) makes partner choice decisions.

Next, in Study 4, we examine how people evaluate the *action* of choosing a willing over an able partner, rather than the *actor* who does the choosing. Specifically, we examine the perceived praiseworthiness, blameworthiness, and ethicality of the act of choosing willing over

able partners. Examining judgments of both the actor and the action allows us to study this topic from both an act-based as well as a person-centered perspective, as previous research has shown that these two impressions can be distinct (Uhlmann, Pizarro, & Diermeier, 2015). In addition to testing whether those who choose willing over able partners receive reputational (i.e. seen as more moral) and partner choice (i.e. chosen more often as a cooperation partner) benefits, and whether choosing a willing partner is seen as a more praiseworthy and a less blameworthy act, we also test whether people who choose willing partners also receive subsequent monetary benefits. We examine this latter question by testing whether people share more money with individuals who choose willing over able partners.

In Part II (Studies 5-7), we examine a number of moderators. If it is true that people gain reputational benefits for choosing willing over able cooperation partners, and successfully anticipate these reputational benefits, perhaps people are more likely to choose willing partners in a public context when their reputation is at stake; we test this hypothesis in both Studies 5 and 6 (Gintis, Smith, & Bowles, 2001; Smith & Bird, 2000). Previous research has shown that prosocial behaviours such as cooperating (Andreoni & Petrie, 2004; Ariely, Bracha, & Meier, 2009; Leimgruber, Shaw, Santos & Olson, 2012; Milinski et al., 2002; Filiz-Ozbay & Ozbay, 2013), punishing as a third-party (Piazza & Bering, 2008), not cheating (Piazza, Bering, & Ingram, 2011), and purchasing prosocial products (Griskevicius, Tybur, & Van den Bergh, 2010) all vary depending upon whether the actor knows their behaviour is being observed. Similarly, people are more likely to be charitable (Shariff & Norenzayan, 2007) and resist temptation (Laurin, Kay, & Fitzsimons, 2012) when they believe their behaviour is being monitored by a supernatural agent.

With that said, other research has found that cues of artificial surveillance have no effect on altruistic behaviour in the context of both charity donations and economic games (Northover, Pederson, Cohen, & Andrews, 2016), suggesting that this tendency to inhibit selfish behavior in public may depend on how certain factors are operationalized and measured. Moreover, recent research has shown that less deliberative people's moral outrage and punishment decisions are insensitive to social visibility because such people rely more heavily on the heuristic that reputation is always at stake, even when decisions are anonymous (Jordan & Rand, 2019). Given that people evolved in environments where their reputation was always at stake, it may be the case that signaling concerns persist regardless of whether a decision is being made in public or private. Here we examine whether people's partner choice decisions are sensitive or insensitive to cues of social visibility. To foreshadow our results, we find across two studies that partner choice is insensitive to social visibility. Potentially this is because partner choice decisions, like punishment decisions, evolved in environments where reputation was always at stake.

In Study 6, along with asking participants to evaluate others, we ask participants to evaluate their own partner choice decisions and also to anticipate how others will view their decisions. This contributes to a growing literature on the accuracy of meta-judgments ("What I think they think about me"; Lees & Cikara, 2019; Rom & Conway, 2018; Saguy & Kteily, 2011; Waytz, Young, & Ginges, 2014). Here we investigate whether people accurately anticipate what they are signaling via their choice of a partner, as well as individual differences in how people go about choosing willing versus able partners, and finally how people view their own partner choice decisions in hindsight.

In addition to investigating the effect of social visibility on partner choice, we investigate in Study 7 whether partner choice decisions are sensitive to group norms. Numerous studies

across multiple contexts have demonstrated that people conform in the presence of social norms in part because it is a cost-effective way to adopt adaptive behavioural patterns and also because it often helps one avoid the reputational and oftentimes material costs of not conforming (Bostyn & Roets, 2017; Gino, Ayal, & Ariely, 2009; Goldstein, Cialdini, & Griskevicius, 2008; Kelly, Ngo, Chituc, Huettel, Sinnott-Armstrong, 2017; Muthukrishna, Morgan, & Henrich, 2015; Peysakhovich & Rand, 2013; Salali, Juda, & Henrich, 2015). Building on prior research demonstrating that people's decisions in sacrificial moral dilemmas can follow a pattern of asymmetric conformity (i.e. conforming to one norm on an issue but not the opposing norm) (Bostyn & Roets, 2017), we explore whether people shift their preference toward willing partners when the norm is to choose a willing partner, but do not shift when the norm is to choose an able partner. Greater reputational costs should exist for not conforming when the majority within a group chooses a willing partner. In contrast, when the norm is to choose an able partner the inverse shift toward choosing able partners should be less pronounced, because, as we predict below, there are no reputational benefits to be gained by choosing able over willing partners, even amongst people who choose able partners for themselves. It should be noted however, that we do expect some shift toward choosing able partners when the norm is to choose an able partner given that norms always tend to have an influence, even on arbitrary and costly behaviours (Pryor, Perfors, & Howe, 2019) and one would be putting themselves at a certain disadvantage by choosing the willing partner when most choosing the able partner. Altogether, we explore whether there exists an asymmetric conformity effect within the context of partner choice decisions.

As stated, choosing willing over able partners could prove to be adaptive if such choosers are in turn more likely to be chosen as cooperation partners by others. Such logic requires that

those who choose willing partners actually are superior cooperation partners (i.e. the signal is honest). If this is not the case, people would eventually learn that those who choose willing partners are not actually any more willing than those who choose able partners, and those who choose willing partners would lose their adaptive advantage (Gintis, Smith, & Bowles, 2001; Grafen, 1990; Roberts, 1998; Zahavi, 1975). Again, we draw a parallel to research on third-party punishment, which has shown that those who engage in third-party punishment not only appear more trustworthy, but actually are more trustworthy (Jordan, Hoffman, Bloom, & Rand, 2016). We therefore aggregate all participant behaviour across our studies, and we test whether those who choose willing partners not only appear more moral, but actually are more moral.

Across all studies, we also examine whether the preference for those who choose willing over able partners is merely the result of a homophily (Byrne, 1961; Lazarsfeld & Merton, 1954; McPherson, Smith-Lovin, & Cook, 2001), whereby most individuals choose to partner with those who make partner choice decisions that are similar to their own decisions (Lydon, Jamieson, & Zanna, 1988). Alternatively, it could be the case that the majority of people choose to partner with able partners but prefer others who choose to partner with willing partners. If the latter is true, our results would imply a strong social selection pressure favoring those who value willingness over ability in partner choice decisions, irrespective of one's own preference for willing over able partners for themselves. Furthermore, such evidence may be informative to scholarship on homophily in social networks (Byrne, 1961; Lazarsfeld & Merton, 1954; McPherson, Smith-Lovin, & Cook, 2001).

General Methods

Ethics Statement

All studies were approved by the Ethics Committee of XXXX (blinded for review) with the IRB protocol number: 12.064.

Procedure

Across the majority of studies in this paper, we recruited participants to both play and observe the behaviour of other players in the Dictator Game (DG). Participants began each experiment by reading instructions for the DG, consisting of a single decision: The Decider has a sum of money and can choose how much of that money to share with the Receiver. Participants were then introduced to two Deciders and told that in a previous game one of these Deciders (able) had 250 monetary units and chose to share 50 monetary units with the Receiver, while the other Decider (willing) had 50 monetary units and chose to share 25 monetary units with the Receiver (see Step 1 in Figure 1). This ratio of monetary units follows previous research comparing ability and willingness (Raihani & Barclay, 2016). It is important to note that the willing partner is only relatively less able, not completely incapable. These two Deciders were then presented to participants with the able Decider again having 250 monetary units and the willing Decider having 50 monetary units (see Step 2 in Figure 1). Choosers were then asked to choose which Decider they would like to have as their Decider in a one-shot interaction. Other participants (Evaluator in the Figure 1) were asked to choose and evaluate both the original Deciders from Step 1 as well as the Choosers who chose one of the Deciders in Step 2 (see Step 3 in Figure 1). In Study 1, the monetary units were dollars, and in all subsequent studies the monetary units were cents.

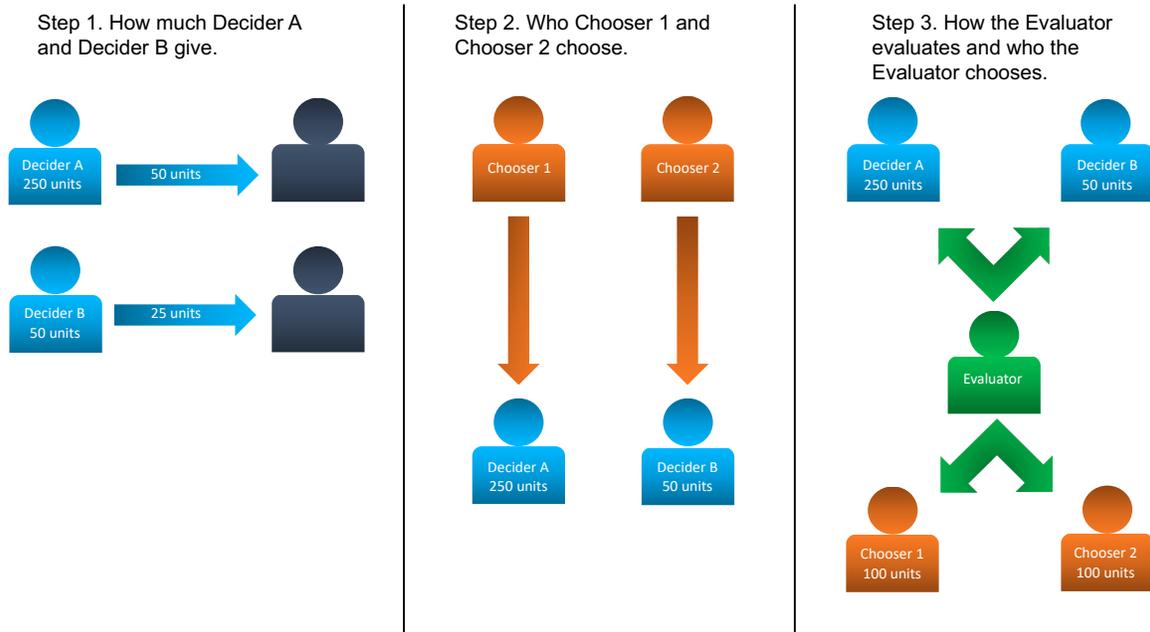


Figure 1. Graphical depiction of the three primary steps across studies.

Interpretation of DG behaviour

Economic games, such as the DG, are a widely used research tool across various scientific disciplines (Camerer 2003; Henrich et al., 2001, 2005; Kahneman, Knetsch, & Thaler, 1986), and research has documented a correlation between behaviour in economic games and behaviour in other contexts such as donating to charities and returning lost money (Benz & Meier, 2008; Franzen & Pointner, 2013; Stoop, 2014). We interpret the percentage of money shared in the DG as an indicator of generosity.

Exclusion criteria

Studies 3 through 7 included preregistered exclusion criteria (links provided in *Methods* section of each study). Excluded from data analysis were non-native English speakers, participants who reported paying low attention to the study (rating below 6 on a 7-point scale), participants who reported providing little or no thought to more than one question on the survey,

participants who failed the comprehension check, and participants whose average response times fell below three SD's of the log-transformed overall mean.

Data availability

All data and study materials are available at Open Science Framework: xxxx (masked for review).

Part I: Demonstrating the signaling effect of partner choice decisions

Study 1

We began by asking whether participants prefer to partner with those who choose willing versus able partners, and whether this pattern is moderated by participants' own preferences for willing versus able partners. The decisions of which partners to choose in this study were hypothetical.

Methods

A total of 87 undergraduate students (45% Male; Mean age = 20.11, $SD = 1.16$) from a large North American university were recruited to participate. Participants were told about two Deciders: One Decider (able) who had \$250 and chose to transfer \$50 in a previous interaction, and another Decider (willing) who had \$50 and chose to transfer \$25 in a previous interaction. Participants were then asked 1) to choose which Decider they would like to have as their Decider in a new DG (in which the participant would be the Recipient), and 2) to rate both Deciders on how trustworthy and moral, how emotional and logical, and how warm and competent they seemed. The order in which the decider choice and ratings were made was randomized. Next, participants were told about two other participants who were given the same choice they were just given. One participant (i.e. Chooser) chose the able Decider (who transferred \$50 out of

\$250), and the other participant (i.e. Chooser) chose the willing Decider (who transferred \$25 out of \$50). Participants were then asked 1) to choose which of these two Choosers they would like to have as their Decider in a new DG where each of the two Choosers would have \$100 (and the participant would be the Recipient), and 2) to rate both Choosers on a 7-point scale (1 = “not at all” to 7 = “extremely”) on how trustworthy, moral, emotional, logical, warm, and competent they seemed.

Results

We first examined participants’ own preferences for Decider in the DG. Participants were more likely to choose to partner with an able Decider (66%) over a willing Decider (34%), $\chi^2(1) = 8.38, p = .004, w = .31$ (see Figure 2a). At the same time, participants rated the able Decider as less trustworthy, moral, emotional, and warm, but more logical and competent, suggesting that moral character ratings and partner choice decisions can sometimes diverge (see Table 1a for statistical details; see Figure 2b for graphical depiction).

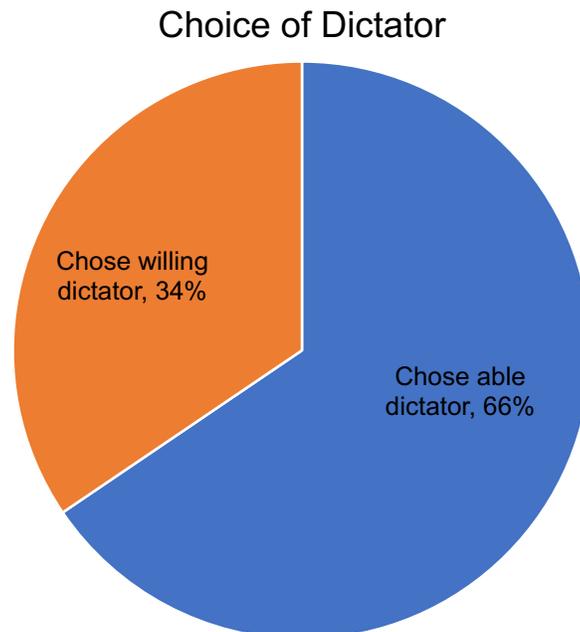


Figure 2a. Choice of a partner for a Dictator Game based on the Dictator's wealth and observed generosity.

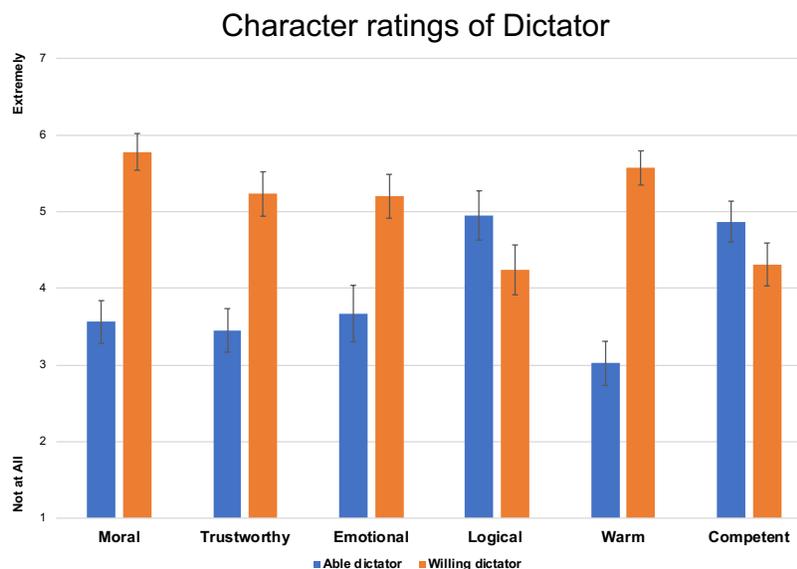


Figure 2b. Inferences about character traits of able and willing dictator.

Next, we examined participants' second-order decisions: their decision of which Chooser they want to be the Decider for a DG after learning who that individual previously chose as a partner. Here, opposite to their first-order decisions, participants were more likely to choose someone who chose a willing Decider (68%) over an able Decider (32%), $\chi^2(1) = 11.05$, $p = .001$, $w = .36$ (see Figure 3a). Participants also rated those who chose a willing Decider as more trustworthy, moral, emotional, and warm, but less logical and competent (see Table 1b for statistical details; see Figure 3b for graphical depiction).

Among the participants who chose the willing Decider for themselves, they overwhelmingly preferred to partner with the Chooser who also chose willing Deciders (70% to 30%), $\chi^2(1) = 4.80$, $p = .03$, $w = .40$. These participants also rated Choosers who chose willing Deciders as more moral, trustworthy, emotional, and warm, but less logical and competent (see Table 1c for statistical details). The participants who chose the able Decider for themselves also

overwhelmingly preferred to partner with Choosers who instead chose the willing Decider (67% to 33%), $\chi^2(1) = 6.33, p = .01, w = .33$. Those who chose able Deciders for themselves also evaluated Choosers who chose the willing Decider as being more emotional and warm and also marginally more moral but less logical than Choosers who chose the able Decider (see Table 1d for statistical details).

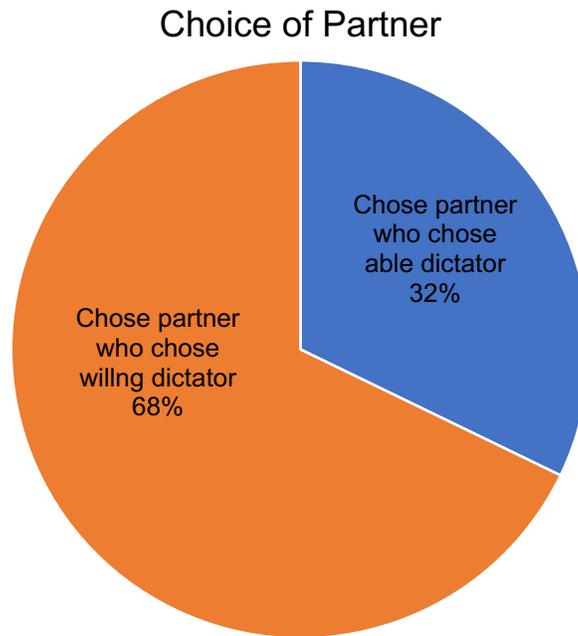


Figure 3a. Choice of a partner for a Dictator Game based on which Dictator the partner chose for a separate interaction.

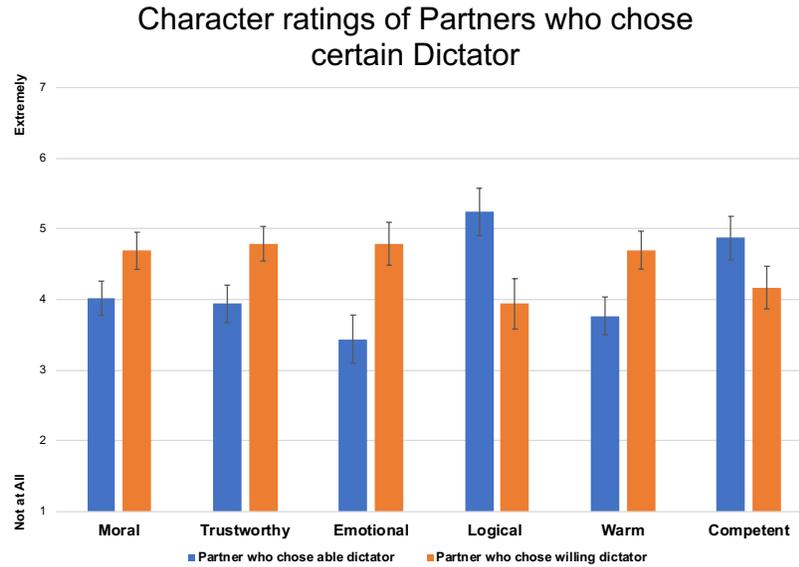


Figure 3b. Inferences about character traits of those who chose either the able or willing dictator.

Discussion

Study 1 provides the first evidence, to our knowledge, of a signaling effect of partner choice decisions: Those who choose to partner with a willing partner over an able, selfish partner are in turn more likely to be selected as interaction partners. Furthermore, choosing a willing partner can signal superior character traits, such as trustworthiness, warmth and moral character. This result is not merely due to a homophily, whereby people value those who make similar decisions as theirs. To the contrary, we find that the majority of people choose to partner with an able Decider but prefer others who choose to partner with a willing Decider. And, this preference for those who choose to partner with a willing Decider holds among individuals who themselves chose to partner with an able Decider.

This is not to say that choosing to partner with a willing Decider has only positive signaling value. We find that, while those who chose willing over able partners are rated as more

trustworthy, moral, emotional, and warm, they are also rated as less logical and competent, which aligns with the fact that choosing the able partner is the utility maximizing choice. This pattern of results held regardless of participants' own partner choices, although the effects were statistically larger when the participant also chose a willing partner.

Table 1a. Character evaluation of an able and willing Decider in Study 1.

Judgment of Trait	Able Decider	Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Moral	<i>M</i> = 3.56 <i>SD</i> = 1.33	<i>M</i> = 5.78 <i>SD</i> = 1.14	11.97	< .001	1.79
Trustworthy	<i>M</i> = 3.45 <i>SD</i> = 1.35	<i>M</i> = 5.23 <i>SD</i> = 1.38	7.96	< .001	1.30
Emotional	<i>M</i> = 3.67 <i>SD</i> = 1.75	<i>M</i> = 5.20 <i>SD</i> = 1.36	6.04	< .001	.98
Logical	<i>M</i> = 4.95 <i>SD</i> = 1.53	<i>M</i> = 4.24 <i>SD</i> = 1.55	2.80	= .006	.46
Warm	<i>M</i> = 3.02 <i>SD</i> = 1.37	<i>M</i> = 5.57 <i>SD</i> = 1.06	13.02	< .001	2.08
Competent	<i>M</i> = 4.87 <i>SD</i> = 1.27	<i>M</i> = 4.31 <i>SD</i> = 1.33	3.03	= .003	.43

Table 1b. Character evaluation of those who chose an able or willing Decider in Study 1.

Judgement of Trait	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Moral	<i>M</i> = 4.02 <i>SD</i> = 1.15	<i>M</i> = 4.69 <i>SD</i> = 1.25	3.45	= .001	.56
Trustworthy	<i>M</i> = 3.94 <i>SD</i> = 1.26	<i>M</i> = 4.79 <i>SD</i> = 1.16	4.12	< .001	.70
Emotional	<i>M</i> = 3.44 <i>SD</i> = 1.63	<i>M</i> = 4.79 <i>SD</i> = 1.45	5.01	< .001	.88
Logical	<i>M</i> = 5.24 <i>SD</i> = 1.60	<i>M</i> = 3.94 <i>SD</i> = 1.70	4.26	< .001	.79
Warm	<i>M</i> = 3.77 <i>SD</i> = 1.26	<i>M</i> = 4.70 <i>SD</i> = 1.28	4.46	< .001	.73
Competent	<i>M</i> = 4.87 <i>SD</i> = 1.46	<i>M</i> = 4.17 <i>SD</i> = 1.43	2.76	= .007	.48

Table 1c. Character evaluation of those who chose an able or willing Decider among those who chose the willing Decider for themselves in Study 1.

Judgement of Trait	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Moral	<i>M</i> = 4.09 <i>SD</i> = 1.15	<i>M</i> = 4.74 <i>SD</i> = 1.26	3.11	= .003	.54
Trustworthy	<i>M</i> = 3.96 <i>SD</i> = 1.28	<i>M</i> = 4.89 <i>SD</i> = 1.11	4.08	< .001	.78
Emotional	<i>M</i> = 3.53 <i>SD</i> = 1.65	<i>M</i> = 4.82 <i>SD</i> = 1.47	3.89	< .001	.83
Logical	<i>M</i> = 5.30 <i>SD</i> = 1.54	<i>M</i> = 3.82 <i>SD</i> = 1.65	4.03	< .001	.93
Warm	<i>M</i> = 3.84 <i>SD</i> = 1.22	<i>M</i> = 4.74 <i>SD</i> = 1.32	3.84	< .001	.71
Competent	<i>M</i> = 5.07 <i>SD</i> = 1.40	<i>M</i> = 3.98 <i>SD</i> = 1.42	3.66	= .001	.77

Table 1d. Character evaluation of those who chose an able or willing Decider among those who chose the able Decider for themselves in Study 1.

Judgement of Trait	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Moral	<i>M</i> = 3.90 <i>SD</i> = 1.56	<i>M</i> = 4.60 <i>SD</i> = 1.25	1.74	= .09	.50
Trustworthy	<i>M</i> = 3.90 <i>SD</i> = 1.24	<i>M</i> = 4.60 <i>SD</i> = 1.25	1.66	= .11	.56
Emotional	<i>M</i> = 3.27 <i>SD</i> = 1.60	<i>M</i> = 4.73 <i>SD</i> = 1.44	3.13	= .004	.99
Logical	<i>M</i> = 5.13 <i>SD</i> = 1.74	<i>M</i> = 4.17 <i>SD</i> = 1.80	1.76	= .09	.54
Warm	<i>M</i> = 3.63 <i>SD</i> = 1.35	<i>M</i> = 4.63 <i>SD</i> = 1.22	2.39	= .02	.77
Competent	<i>M</i> = 4.50 <i>SD</i> = 1.52	<i>M</i> = 4.53 <i>SD</i> = 1.41	.07	= .94	.02

Study 2

In Study 1, we find that those who choose to partner with willing Deciders over able Deciders are themselves more likely to be picked for cooperative interactions. While this study has the advantage of being conducted in-lab, it has the disadvantage of being hypothetical, and so actual money for participants was not at stake. In Study 2, we address this concern by examining the second-order partner choice selection effect with an incentivised online experiment without deception, in which participants are asked to make real partner choice decisions with real money at stake.

Methods

A total of 199 participants took part in this study. First, 100 workers (59% Male; Mean age = 36.20, $SD = 10.60$) from Amazon Mechanical Turk were recruited to play the role of one of the Deciders in this study. These Deciders were asked to choose between an able or a willing Decider for themselves. Next, they were asked out of \$1.00 how much they would share if they were the Decider. Then, half were endowed with \$2.50 and asked whether they want to share 50 cents or 0 cents, and the other half were endowed with \$0.50 cents and asked whether they want to share 25 cents or 0 cents. After this process was complete, a total of 99 workers (59% Male; Mean age = 36.20, $SD = 11.13$) from Amazon Mechanical Turk were recruited to participate. Participants were informed that they could earn bonus money depending upon their decision in the experiment. After reading about the two Deciders (One Decider [able] who had 250 cents and chose to transfer 50 cents in a previous interaction, and another Decider [willing] who had 50 cents and chose to transfer 25 cents in a previous interaction), participants were asked to choose which Decider they would like to have as their Decider in a DG. Next, participants were told of two other participants who were given the same choice they were just given. One Chooser chose

the Decider who had 250 cents and chose to share 50 cents in a previous interaction, and the other Chooser chose the Decider who had 50 cents and chose to share 25 cents in a previous interaction. Then, participants were asked to choose which of these two Choosers they would like to have as their Decider in a new DG (with the participant as the Recipient). Participants received bonus money according to the decisions made by the partner they selected for the two DGs they participated in.

Results

Our results replicate the results from Study 1. Participants were more likely to choose to partner with an able Decider (69%) over a willing Decider (31%) for a DG, $\chi^2(1) = 13.83, p < .001, w = .37$. Despite this, they were more likely to choose to partner with someone who chose a willing Decider (72%) over an able Decider (28%), $\chi^2(1) = 18.68, p < .001, w = .43$.

Discussion

In Study 2, we replicated the second-order partner choice selection effect with an online sample of participants playing a DG with real partners and with real money at stake. Taken together, Studies 1 and 2 provide initial evidence of the potential functional benefits of choosing to partner with those who are willing over those who are able, even when this leads to an immediate material loss. Although the immediate material payoff may be superior when partnering with a wealthy partner, the reputational and cooperative benefits appear to be superior when partnering with a willing partner.

Study 3

In Studies 1 and 2, we demonstrate that individuals prefer to partner with those who have previously decided to partner with someone who chose a willing Decider over an able Decider. In Study 3 we reverse the experimental logic by asking participants to predict the partner choice

decisions of a morally good individual and a morally bad individual. This approach allows us establish whether people have specific expectations about the partner choice decisions of a moral (versus immoral) agent.

Methods

A total of 200 workers from Amazon Mechanical Turk were recruited to participate. A total of 59 participants (29.5%) were excluded based on preregistered exclusion criteria. This left a total of 141 responses (48% Male; Mean age = 36.67, $SD = 10.70$) to be analysed.

After reading about the two Deciders (i.e., one able Decider who had 250 cents and chose to transfer 50 cents in a previous, and one willing Decider who had 50 cents and chose to transfer 25 cents in a previous interaction), participants were asked to make the binary choice of whether a moral and trustworthy individual would choose the able partner or willing partner to be their Decider in a DG. Participants were also asked to predict whether an immoral and untrustworthy individual would choose an able partner or a willing partner to be their Decider in a DG. Participants were assigned to make both of these predictions, with the order of presentation counterbalanced. Next, participants were asked to make the hypothetical decision between the able partner or willing partner to be their Decider in a new DG (with the participant as the Recipient). Before conducting this study, methods, hypotheses, and analysis plans were pre-registered and can be accessed at: <http://aspredicted.org/blind.php?x=fv2bz8>

Results

Participants predicted that the moral and trustworthy individual would choose to partner with the willing Decider (62%) over the able Decider (38%), $\chi^2(1) = 7.72, p = .005, w = .23$, and that the immoral and untrustworthy person would choose to partner with the able Decider (84%) over the willing Decider (16%), $\chi^2(1) = 66.73, p < .001, w = .69$. Furthermore, even immediately

after making such predictions, most participants continued to choose the able Decider as the Decider for their own DG (61% vs. 39%), $\chi^2(1) = 6.82, p = .009, w = .22$.

This same pattern was found among the 55 participants who chose the willing Decider for themselves. These participants predicted that the moral and trustworthy person would also choose to partner with the willing Decider (89% vs. 11%), $\chi^2(1) = 33.62, p < .001, w = .78$, and that the immoral and untrustworthy person would choose to partner with the able Decider (83% vs. 16%), $\chi^2(1) = 24.89, p < .001, w = .67$. We found a different pattern among the 86 participants who chose the able Decider for themselves, thus the minority of participants are driving the effect in the overall sample. While these participants continued to predict that the immoral and untrustworthy person would choose to partner with the able Decider (84% vs. 15%), $\chi^2(1) = 41.86, p < .001, w = .70$, they had no consistent prediction about the partner that the moral and trustworthy person would choose, predicting that a moral person would choose to partner with the able Decider (55%) slightly but not significantly more often than the willing Decider (44%), $\chi^2(1) = 1.16, p = .28, w = .12$. This interaction between participants' own partner choice decisions (deciding to partner with a willing vs. able Decider) and participants' prediction for who a good person would choose was significant, $\chi^2(1) = 28.63, p < .001, V = .45$.

Discussion

In Study 3, we explore the expectations that people have for how moral and immoral agents make partner choice decisions. In general, people predict that moral people will value willingness over ability, and immoral people will value ability over willingness when making partner choice decisions. The expectation for bad people to value ability over willingness held even amongst participants who themselves valued ability over willingness. This finding suggests that the effect found in Studies 1 and 2, namely that people who choose willing partners are

themselves chosen as partners, may be driven in part because choosing willing partners fits the expected behavioural profile of good people.

Recall that in Studies 1 and 2 we found that second-order partner choice preferences were not influenced by first-order partner choice preferences; by contrast, we did find an influence here, though it was somewhat limited. Specifically, we found a different pattern of expectations among those who chose a willing Decider compared to those who chose an able Decider. Participants who chose the willing Decider expected good people to also choose the willing Decider, but this effect did not emerge for participants who chose the able Decider. Thus, while judgments about what bad people would do was robust to personal partner preference, judgments about what good people would do was influenced by personal partner preference. Along with Studies 1 and 2, the results from Study 3 indicate that choosing to partner with willing over able partners not only signals that one is moral but also fits with people's more general notions of a how a moral agent will behave.

Study 4

In Study 4, we examine whether those who choose willing over able partners actually behave more willingly in the DG. Previous research on third-party punishing has shown those who punish not only appear more moral but actually are more moral (Jordan, Hoffman, Bloom, & Rand, 2016). We draw a parallel between this research and ours by examining whether choosing willing over able partners is an honest signal of generosity.

Also, in Studies 1-3, we take a person-centered approach to moral judgment (Uhlmann, Pizarro, & Diermeier, 2015), investigating the perceptions of those who choose to pair with willing versus able Deciders. In Study 4, we extend these results by taking an act-based perspective. In particular, we evaluate what people think of the action of choosing a willing

partner versus an able partner. Previous research has demonstrated that judgments of actors do not always align with judgments of actions (Uhlmann, Pizarro, & Diermeier, 2015).

Methods

A total of 200 workers from Amazon Mechanical Turk were recruited to participate. A total of 49 participants (24.5%) were excluded based on preregistered exclusion criteria. This left a total of 151 responses (48% Male; Mean age = 37.81, $SD = 10.95$) to be analysed.

After reading about the two Deciders, participants were presented with Chooser 1 and Chooser 2. Next, participants were asked to evaluate on a 7-point scale (1 = “not at all” to 7 = “extremely”) how praiseworthy, blameworthy, and morally correct the person’s choice was, and how much the person cares about fairness. Then, participants were asked to play the role of the Decider, and they could choose to transfer 0 – 100 cents to the participant they just evaluated. Participants received the money they chose to not transfer, but there were no other participants who received the money they did choose to transfer; thus, deception was used. Lastly, participants were asked to choose the same able Decider or willing Decider to be their Decider in a new DG. Before conducting this study, methods, hypotheses, and analysis plans were pre-registered and can be accessed at: <http://aspredicted.org/blind.php?x=36ub8h>

Results

Crucial to our hypothesis, across all DG transfers in this study, those who chose willing partners shared more than those who chose able partners, ($M = 44.10$, $SD = 26.37$ vs. $M = 32.12$, $SD = 26.11$), $t(149) = 2.66$, $p = .009$, $d = .46$. Thus, it appears that those who choose willing partners are both perceived as more moral by others and in fact exhibit greater generosity in the DG.

Participants on the whole did not view the act of choosing the willing partner as more praiseworthy or blameworthy than choosing the able partner, nor did the person who chose the willing partner receive more money in the DG relative to the person who chose the able partner (see Table 2a for statistical details). Participants did report the act of choosing the willing partner as being marginally more moral, $t(149) = 1.74, p = .08, d = .29$, and they also viewed those who make such a choice as caring more about fairness, $t(149) = 7.17, p < .001, d = 1.58$. Even after making such judgments, most participants chose the able Decider for themselves (66% vs. 34%), $\chi^2(1) = 15.90, p < .001, w = .32$.

Among the 100 participants who chose the able partner for themselves, they also reported that those who chose the able partner care less about fairness (see Table 2b for statistical details), $t(98) = 5.80, p < .001, d = 1.17$. These 100 participants also shared more money with the person who also chose the able partner relative to the person who chose the willing partner, $t(98) = 2.20, p = .03, d = .46$. There was no significant difference for praise, blame, or moral judgments amongst such participants (minimum $p = .36$).

Among the 51 participants who chose the willing partner for themselves, they viewed the act of choosing the willing partner as being more praiseworthy (see Table 2c for statistical details), $t(49) = 2.24, p = .03, d = .63$, marginally less blameworthy $t(49) = 1.79, p = .08, d = .48$, more moral $t(49) = 3.19, p = .002, d = 1.21$, and signaling that the chooser cares about fairness $t(49) = 4.31, p < .001, d = .91$. They did not share more money with those who also chose the willing partner over the able partner, $t(49) = .76, p = .45, d = .21$.

We find an interaction between participants' personal choice and how they evaluate the actions of others (see Table 2d for statistical details). Those who chose willing partners viewed choosing willing partners as being more praiseworthy, less blameworthy, and more moral, while

those who chose able partners for themselves did not report a difference in how they viewed the act of choosing a willing versus able partner.

We also find a marginally significant interaction $F(1, 147) = 3.63, p = .06, \eta p^2 = .02$, such that participants who chose the able partner for themselves sent more money to another person who also chose the able partner, (Sent to Able: $M = 36.62, SD = 26.52$ vs. Sent to Willing: $M = 25.08, SD = 24.14$), but participants who chose the willing partner for themselves did not exhibit the same level of partiality toward those making the same partner choices decisions, (Sent to Able: $M = 41.00, SD = 30.09$ vs. Sent to Willing: $M = 46.64, SD = 23.15$).

Discussion

In Study 4, we find that those who chose willing over able partners were more generous in the DG, suggesting that their partner choices are an honest signal of generosity. This finding is the first evidence, to our knowledge, of partner choice decisions serving as honest signals of moral character traits. We continue to address this question in Part II.

We also find that judgments about the praiseworthiness and blameworthiness of partner choice decisions largely depend on individuals' own partner preferences. This pattern stands in contrast to the results of Studies 1 and 2, in which all participants, irrespective of personal partner choice, preferred those who chose willing partners, but aligns somewhat with the results from Study 3 where judgments about what good people (but not bad people) would do was influenced by personal partner choice. We found that those who chose willing partners viewed choosing a willing partner as being more praiseworthy and ethical, but those who chose able partners did not report a difference in how they viewed the act of choosing a willing versus able partner.

Thus, it appears that judgments about the actor (in Studies 1 and 2) are robust to personal partner choice preferences, whereas judgments about the action (in Study 4), and predictions about what a good person would do (in Study 3), are influenced to some extent by personal partner choice preferences. This pattern may suggest an act-person dissociation in judgments about the partner choice decisions of others (Uhlmann, Pizarro, & Diermeier, 2015). One potential explanation for the dissociation in this context is that judgments of praise require more than viewing someone as a moral person – they require that the act is deemed of certain importance. Perhaps the act of choosing to partner with willing others, while reflecting moral character, is not deemed worthy of recognition.

One constant across all participants and all studies is that participants view those who choose willing partners as caring more about fairness. Even after making such judgments, the majority of participants chose to partner with an able partner over a willing partner, consistent with the results in Studies 1-3. Interestingly, those who chose willing partners did not receive larger transfers in the DG. Thus, it appears that, although choosing willing partners leads to reputational and cooperative benefits, it may not lead to immediate material benefits. This finding aligns with research on third-party punishment, which has shown that those who punish are seen as more moral and are chosen more often as cooperation partners, but do not receive more money in economic games, including as the receiver in the DG (Horita, 2010, but see Raihani & Bshray, 2015b).

Table 2a. Judgements about the decision to choose an able or willing Decider in Study 4.

Judgement of Action	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Praiseworthy	<i>M</i> = 4.07 <i>SD</i> = 1.52	<i>M</i> = 4.36 <i>SD</i> = 1.53	1.14	= .25	.19
Blameworthy	<i>M</i> = 2.57	<i>M</i> = 2.49	.29	= .77	.05

	<i>SD</i> = 1.75	<i>SD</i> = 1.54			
Cares about	<i>M</i> = 3.70	<i>M</i> = 5.48	7.17	< .001	1.58
Fairness	<i>SD</i> = 1.45	<i>SD</i> = 1.59			
Morally	<i>M</i> = 4.18	<i>M</i> = 4.60	1.74	= .08	.29
Correct	<i>SD</i> = 1.44	<i>SD</i> = 1.50			
Money	<i>M</i> = 37.82	<i>M</i> = 34.09	.85	= .40	.14
Received	<i>SD</i> = 27.42	<i>SD</i> = 25.88			

Table 2b. Judgements about the act of choosing an able or willing Decider among those who chose the able Decider for themselves in Study 4.

Judgement of Action	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Praiseworthy	<i>M</i> = 4.25 <i>SD</i> = 1.49	<i>M</i> = 4.21 <i>SD</i> = 1.56	.13	= .90	.02
Blameworthy	<i>M</i> = 2.34 <i>SD</i> = 1.54	<i>M</i> = 2.64 <i>SD</i> = 1.65	.92	= .36	.19
Cares about	<i>M</i> = 3.82 <i>SD</i> = 1.32	<i>M</i> = 5.51 <i>SD</i> = 1.57	5.80	< .001	1.17
Fairness	<i>M</i> = 4.43 <i>SD</i> = 1.35	<i>M</i> = 4.33 <i>SD</i> = 1.31	.34	= .73	.08
Morally	<i>M</i> = 36.62 <i>SD</i> = 26.52	<i>M</i> = 25.08 <i>SD</i> = 24.14	2.20	= .03	.46
Correct					
Money					
Received					

Table 2c. Judgements about the act of choosing an able or willing Decider among those who chose the willing Decider for themselves in Study 4.

Judgement of Action	Partner who chose Able Decider	Partner who chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Praiseworthy	<i>M</i> = 3.61 <i>SD</i> = 1.56	<i>M</i> = 4.57 <i>SD</i> = 1.50	2.24	= .03	.63
Blameworthy	<i>M</i> = 3.17 <i>SD</i> = 2.15	<i>M</i> = 2.29 <i>SD</i> = 1.38	1.79	= .08	.48
Cares about	<i>M</i> = 3.39 <i>SD</i> = 1.73	<i>M</i> = 5.43 <i>SD</i> = 1.64	4.31	< .001	1.21
Fairness	<i>M</i> = 3.52 <i>SD</i> = 1.50	<i>M</i> = 4.96 <i>SD</i> = 1.67	3.19	= .002	.91
Morally	<i>M</i> = 41.00 <i>SD</i> = 30.08	<i>M</i> = 46.64 <i>SD</i> = 23.15	.76	= .45	.21
Correct					
Money					
Received					

Table 2d. Interaction between participants partner choice and evaluation of other's actions in Study 4.

Judgement of Action	Self chose Able; Other chose Able	Self chose Able; Other chose Willing	Self chose Willing; Other chose Able	Self chose Willing; Other chose Willing	<i>F</i>	<i>p</i>	ηp^2
Praiseworthy	<i>M</i> = 4.25 <i>SD</i> = 1.49	<i>M</i> = 4.21 <i>SD</i> = 1.56	<i>M</i> = 3.61 <i>SD</i> = 1.56	<i>M</i> = 4.57 <i>SD</i> = 1.50	3.59	= .06	.02
Blameworthy	<i>M</i> = 2.34 <i>SD</i> = 1.54	<i>M</i> = 2.64 <i>SD</i> = 1.65	<i>M</i> = 3.17 <i>SD</i> = 2.15	<i>M</i> = 2.29 <i>SD</i> = 1.38	4.28	= .04	.03
Cares about Fairness	<i>M</i> = 3.82 <i>SD</i> = 1.32	<i>M</i> = 5.51 <i>SD</i> = 1.57	<i>M</i> = 3.39 <i>SD</i> = 1.73	<i>M</i> = 5.43 <i>SD</i> = 1.64	.43	= .52	.003
Morally Correct	<i>M</i> = 4.43 <i>SD</i> = 1.35	<i>M</i> = 4.33 <i>SD</i> = 1.31	<i>M</i> = 3.52 <i>SD</i> = 1.50	<i>M</i> = 4.96 <i>SD</i> = 1.69	9.52	= .002	.06
Money Received	<i>M</i> = 36.62 <i>SD</i> = 26.51	<i>M</i> = 25.08 <i>SD</i> = 24.14	<i>M</i> = 41.00 <i>SD</i> = 30.08	<i>M</i> = 46.64 <i>SD</i> = 23.15	3.63	= .06	.02

Part II: Moderators of partner choice

Study 5

In Part I, we found that one's partner choices can afford one a moral reputation, makes one more likely to be chosen as a cooperation partner, adheres to expectations for how a moral person will behave, can be viewed as a moral action, and may serve as an honest signal of morality. In Part II, we explore potential moderators of partner choice while also further examining the honest signaling effect of partner choice. In Study 5, we seek to replicate the effect of choosing willing over able partners as an honest signal of morality, i.e. those who choose willing over able partners share more money as a decider in the DG, as is observed in Study 4. Furthermore, to verify the honest signaling results from Studies 4 and 5, we conduct a pooled analysis of all DG transfer decisions across all studies in this paper. We therefore provide a possible answer to the question of why people choose willing partners (even at a financial cost to themselves). It may be the case that they obtain some reputation benefit due to their being truly better (more generous) people.

We also explore in Study 5 whether people modulate their choice of partner, as well their generosity in the DG, depending on whether their choice is public or private. Thus far, we've investigated decisions made in private – only the participants themselves know about the choices they make. However, our overarching hypothesis is that partner choice decisions carry signaling value. Thus, we might expect that participants will make different decisions in public (i.e. when others will know) than in private. This follows from other work investigating costly signaling (Piazza & Bering, 2008).

Methods

A total of 399 workers from Amazon Mechanical Turk were recruited to participate. A total of 45 participants (11.2%) were excluded based on preregistered exclusion criteria. This left a total of 354 responses (57% Male; Mean age = 35.09, $SD = 10.57$) to be analysed.

Our study included two factors. First, participants were assigned to one of two levels of the first factor: a public partner choice decision or a private partner choice decision. Second, they were assigned to one of two levels of the second factor: public DG or private DG. Thus, we employ a 2x2 design, with participants being randomly assigned to one level of each factor.

After reading about the two Deciders, participants were asked to choose which Decider they would like to have as their Decider in a new DG. Half of the participants ($n = 179$) were told that their decision would be made public to another participant who could then choose the participant to be their Decider. The other half ($n = 175$) were told that their decision would be kept private, and the other participant would decide to partner with them without knowledge of their partner choice. Next, participants were assigned to the role of Decider and asked how much money out of 100 cents they would share. Participants received the money they chose to not transfer, but the money they chose to transfer was not actually sent to another participant.

Approximately half of the participants ($n = 174$) were told that their decision as the Decider would be made public to another participant, and the remainder ($n = 180$) were told that their decision would be kept private and not shared with another participant. Before conducting this study, methods, hypotheses, and analysis plans were pre-registered and can be accessed at:

<http://aspredicted.org/blind.php?x=gf4dx9>

Results

Critically, replicating the pattern seen in Study 4, there was an effect of participants who chose the able decider versus participants who chose the willing decider on money shared in the DG, with those who chose willing partners sharing more in the DG than those who chose able partners ($M = 36.45$, $SD = 21.20$ vs. $M = 29.07$, $SD = 22.89$), $F(1, 346) = 8.58$, $p = .004$, $\eta p^2 = .02$. Participants also chose the able decider more often than the willing decider in both the public (65% vs. 35%), $\chi^2(1) = 16.90$, $p < .001$, $w = .31$, and private (70% vs. 30%), $\chi^2(1) = 28.81$, $p < .001$, $w = .41$, conditions. Next, we next ran a 2(Private vs Public Partner Choice) x 2(Private vs Public DG) x 2(Chose Able vs Chose Willing) ANOVA, with money shared as the DV. There was no interaction between the variables, nor was there an effect of Private vs Public Partner Choice or Private vs Public DG on money shared in the DG.

As was seen here and in Study 4, those who chose the willing partner for themselves also behaved more willingly in the DG. To further verify this result from Studies 4 and 5, we include here a pooled analysis of all DG transfer decisions across all studies. Analysing DG behaviour from Studies 2, 4, and 5, we compared the transfers made by the 199 participants who chose a willing partner for themselves to the transfers made by the 405 participants who chose an able partner for themselves. The results indicate that, across Studies 2, 4, and 5, those who chose a

willing partner ($M = 37.52$, $SD = 23.51$) shared more in the DG, compared to those who chose an able partner ($M = 29.03$, $SD = 23.78$), $t(602) = 4.14$, $p < .001$, $d = .36$ (see Figure 4).

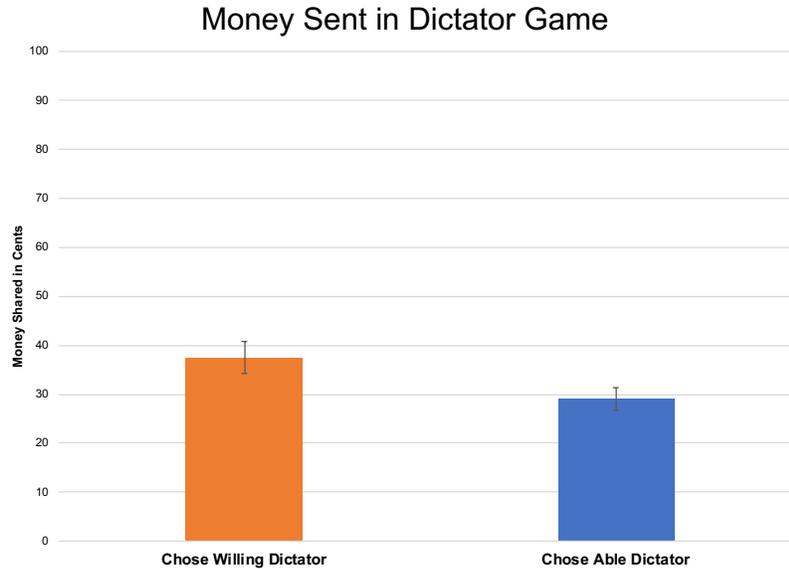


Figure 4. Money shared in Dictator Game by those who previously chose willing versus able Dictators.

Discussion

Importantly, the results from Study 5 replicated the key effect seen in Study 4: those who chose a willing partner shared more in the DG, compared to those who chose an able partner. Furthermore, the pooled analysis of all transfer decisions across Studies 2, 4, and 5 suggests that choosing a willing over able partner may indeed be an honest signal of generosity: not only are those who choose willing partners perceived as being more moral, but they in fact act more generously in the DG.

The results from Study 5 also suggest that people do not modulate their choice of partner based on whether the decision is public or private (although the able partner was chosen slightly, albeit non-significantly, more when participants were choosing in private). This may align with

recent research on outrage and third-party punishment, showing that signaling desires motivate less deliberative people regardless of whether the decision is made in public or private (Jordan & Rand, 2019). Given that humans evolved in environments where reputation was always at stake, some people punish and express outrage, as if they are being watched, even when their decisions are in fact anonymous. This may also explain our result of participants' making similar DG decisions regardless of whether their decisions were made in public or private.

Study 6

In Study 6, we explore how people who choose willing versus able partners evaluate their own partner choice decisions (Nisbett & Wilson, 1977). Drawing on previous research showing that those who are more cooperative rely more on emotion in their decision-making (Levine et al., 2018; Rand, Greene, & Nowak, 2012), we predict that people who choose willing partners may report relying more on emotion rather than reason. We also investigate whether people can accurately anticipate what they are signaling to others via their partner choice. We investigate this by comparing participants' evaluation of their own partner choice decisions to how others view their decision, while again examining whether partner choice is dependent on social visibility. Here, we improve upon Study 5 by employing a simpler manipulation of social visibility. In particular, we clarified the explanation of how the participant's decision would be made public or private.

Methods

A total of 601 workers from Amazon Mechanical Turk were recruited to participate. A total of 80 participants (13.3%) were excluded based on preregistered exclusion criteria. This left a total of 521 responses (49% Male; Mean age = 38.81, $SD = 12.42$) to be analysed.

Participants were assigned to one of six conditions in this study. In one condition, participants were asked to choose between an able or a willing Decider while being told that their decision would be kept *private* from other workers who could choose to partner with them. In a second condition, participants were asked to choose between an able or a willing Decider while being told that their decision would be made *public* to other workers who could choose to partner with them. In both of these conditions, participants were asked, after making their partner choice to 1) evaluate their own decision and 2) predict how others would evaluate them if they were to see their decision. The order in which they answered these two sets of questions was randomized. In the four other conditions, participants were assigned to evaluate another worker who chose either a willing or an able partner, and made their decision in public or private.

Across all six conditions, participants evaluated either themselves or another worker on the following items on a 7-point scale (1 = “not at all” to 7 = “extremely”): how much the decision was based on feelings and emotions, how much the decision was based on logical reasoning, perceived personal warmth, perceived personal competence, how praiseworthy was the choice, how blameworthy was the choice, how much they/the other worker cares about fairness, and how morally correct was the choice. Before conducting this study, methods, hypotheses, and analysis plans were pre-registered and can be accessed at:

<http://aspredicted.org/blind.php?x=g8dq76>

Results

Participants preferred the able decider in the public condition (70% vs. 30%), $\chi^2(1) = 13.44, p < .001, w = .40$, as well as in the private condition (72% vs. 28%), $\chi^2(1) = 16.11, p < .001, w = .44$.

Compared to people who chose the able decider, people who chose the willing decider reported that they made their decision based more on feelings and emotions (see Table 3a for statistical details) $t(169) = 5.10, p < .001, d = .74$, and based less on logic, $t(169) = 2.14, p = .03, d = .34$. They also reported being more competent $t(169) = 2.47, p = .02, d = .42$, reported their choice as being more praiseworthy $t(169) = 2.63, p = .009, d = .44$, and less blameworthy $t(169) = 2.30, p = .02, d = .39$, and more morally correct $t(169) = 3.04, p = .003, d = .51$, and reported caring more about fairness $t(169) = 3.19, p = .002, d = .56$. These results did not vary depending on whether the decision was made in public or private (lowest interaction value, $p = .34$).

Compared to people who chose the able decider, people who chose the willing decider expected others to see them as being guided more by feelings and emotions (see Table 3b for statistical details) $t(169) = 4.35, p < .001, d = .72$, as being more warm $t(169) = 4.86, p < .001, d = .83$, and competent $t(169) = 2.55, p = .01, d = .44$, as being more praiseworthy $t(169) = 3.32, p = .001, d = .54$, and less blameworthy $t(169) = 3.35, p = .001, d = .58$, and more morally correct $t(169) = 5.57, p < .001, d = .95$, and as caring more about fairness $t(169) = 5.68, p < .001, d = .97$. These results did not vary depending on whether the decision was made in public or private (lowest interaction value, $p = .08$).

Among participants who chose the able partner, their evaluations of their own decision and predictions for how others would evaluate them differed (see Table 3c). These participants expected to be seen as less logical, warm, competent, willing, and moral, and more blameworthy than they believed themselves to be. Among participants who chose the willing partner, their evaluations of their own decision and predictions for how others would evaluate them only differed on two variables (see Table 3d). These participants expected to be seen as less

competent and as caring less about fairness than they believed themselves to be. Otherwise, they expected others to perceive them as they perceived themselves.

There were significant interactions between people's own evaluations of their partner choice decision and other people's evaluation of their partner choice decisions on a number of dependent variables (see Table 3e). People believed that they were marginally more competent for choosing the willing partner, but observers disagreed, seeing those who chose the able partner as marginally more competent, $F(1, 517) = 6.93, p = .009, \eta p^2 = .01$. Although people saw themselves as caring less about fairness by choosing the able partner, they anticipated less of a reputational cost than they actually incurred, $F(1, 517) = 8.19, p = .004, \eta p^2 = .02$.

There were also significant interactions between people's expectations for how they would be evaluated by others and how other people actually evaluated them on a number of dependent variables (see Table 3f). Participants who chose the able partner made accurate predictions as to how warm they would seem to others, but participants who chose the willing partner predicted that they would be seen as much warmer than observers actually perceived them to be, $F(1, 517) = 4.44, p = .04, \eta p^2 = .009$. Similarly, participants who chose the able partner made accurate predictions as to how competent they would seem to others, but participants who chose the willing partner predicted that they would be seen as much more competent than observers actually perceived them to be, $F(1, 517) = 8.38, p = .004, \eta p^2 = .02$. Interestingly, participants also predicted that they would be seen as more competent by choosing the willing partner, but they were actually seen as more competent by choosing the able partner, $F(1, 517) = 8.38, p = .004, \eta p^2 = .02$.

There were also main effects such that those who chose the willing decider were seen by participants as more emotional, $F(1, 394) = 21.04, p < .001, \eta p^2 = .05$, less logical, $F(1, 394) =$

7.27, $p = .007$, $\eta p^2 = .03$, more warm, $F(1, 394) = 21.45$, $p < .001$, $\eta p^2 = .05$, more praiseworthy, $F(1, 394) = 13.79$, $p < .001$, $\eta p^2 = .03$, less blameworthy, $F(1, 394) = 5.03$, $p = .03$, $\eta p^2 = .02$, more morally correct, $F(1, 394) = 33.41$, $p < .001$, $\eta p^2 = .07$, and as caring more about fairness, $F(1, 394) = 96.17$, $p < .001$, $\eta p^2 = .20$. These results did not vary depending on whether the decision was made in public or private.

Discussion

Our results reveal important differences between people who choose willing versus able partners. Notably, not only are people who choose willing partners more willing in the DG, as shown in Studies 4 and 5, but as seen here in Study 6 such individuals also report caring more about fairness. People who choose willing partners also feel that they are worthier of praise. Importantly, this seems to not lead to a licensing effect but rather a consistency effect, given their subsequent generosity in the DG. Also, the fact that those who choose willing partners report relying more on emotion aligns with previous research showing that those who rely on emotion over reason in economic games are more likely to cooperate (Levine et al., 2018; Rand, Greene, & Nowak, 2012). Finally, people who choose able partners expect others to misjudge them based on their choice, while people who choose willing partners are, by and large, accurate about other's interpretations of them.

Our results also reveal that people make mispredictions about how they are seen by others. Those who chose willing partners believed themselves to be, and expected others to see them as, more competent than people judge them to be. These participants also expected others to see them as being warmer than they actually were seen to be. Meanwhile, people who chose able partners believed themselves to be fairer than others actually judged them to be, and also

under-predicted the reputational cost that they would incur by choosing an able partner. This is the first examination of the accuracy of meta-judgments within the domain of partner choice.

Consistent with the results of Study 5, we again found a null effect of social visibility (although again the able partner was chosen slightly, albeit non-significantly, more in private). Furthermore, participants' evaluations of both their own and other people's choice of a partner were not influenced by social visibility. This suggests that partner choice decisions may be robust to cues of social visibility, though further exploration across other contexts is needed.

Table 3a. Self-evaluation among those who chose an able or willing Decider in Study 6.

Self-Evaluation	Chose Able Decider	Chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Emotional	<i>M</i> = 2.91 <i>SD</i> = 1.78	<i>M</i> = 4.28 <i>SD</i> = 1.90	5.10	< .001	.74
Logical	<i>M</i> = 5.94 <i>SD</i> = 1.23	<i>M</i> = 5.46 <i>SD</i> = 1.59	2.14	= .03	.34
Warm	<i>M</i> = 5.17 <i>SD</i> = 1.33	<i>M</i> = 5.56 <i>SD</i> = 1.49	1.67	= .10	.28
Competent	<i>M</i> = 5.81 <i>SD</i> = 1.02	<i>M</i> = 6.22 <i>SD</i> = .91	2.47	= .02	.42
Praiseworthy	<i>M</i> = 4.27 <i>SD</i> = 1.43	<i>M</i> = 4.92 <i>SD</i> = 1.55	2.63	= .009	.44
Blameworthy	<i>M</i> = 2.98 <i>SD</i> = 1.60	<i>M</i> = 2.36 <i>SD</i> = 1.56	2.30	= .02	.39
Cares about Fairness	<i>M</i> = 5.26 <i>SD</i> = 1.47	<i>M</i> = 6.02 <i>SD</i> = 1.25	3.19	= .002	.56
Morally Correct	<i>M</i> = 4.83 <i>SD</i> = 1.45	<i>M</i> = 5.56 <i>SD</i> = 1.40	3.04	= .003	.51

Table 3b. Participant predictions for how others will evaluate them based on their choice of an able or willing Decider in Study 6.

Predict How Others Evaluate	Chose Able Decider	Chose Willing Decider	<i>t</i>	<i>p</i>	<i>d</i>
Emotional	<i>M</i> = 3.15 <i>SD</i> = 1.72	<i>M</i> = 4.42 <i>SD</i> = 1.80	4.35	< .001	.72
Logical	<i>M</i> = 5.52 <i>SD</i> = 1.42	<i>M</i> = 5.20 <i>SD</i> = 1.44	1.34	= .18	.22

Warm	$M = 4.17$ $SD = 1.46$	$M = 5.32$ $SD = 1.30$	4.86	< .001	.83
Competent	$M = 5.23$ $SD = 1.22$	$M = 5.74$ $SD = 1.10$	2.55	= .01	.44
Praiseworthy	$M = 4.12$ $SD = 1.36$	$M = 4.92$ $SD = 1.58$	3.32	= .001	.54
Blameworthy	$M = 3.26$ $SD = 1.59$	$M = 2.38$ $SD = 1.46$	3.35	= .001	.58
Cares about	$M = 4.26$ $SD = 1.56$	$M = 5.72$ $SD = 1.46$	5.68	< .001	.97
Fairness	$M = 4.39$ $SD = 1.39$	$M = 5.66$ $SD = 1.29$	5.57	< .001	.95
Morally					
Correct					

Table 3c. Personal versus predicted evaluation among those who chose an able Decider in Study 6.

Trait	Personal Evaluation	Predicted Evaluation	<i>t</i>	<i>p</i>	<i>d</i>
Emotional	$M = 2.91$ $SD = 1.78$	$M = 3.15$ $SD = 1.72$	1.88	= .06	.17
Logical	$M = 5.94$ $SD = 1.23$	$M = 5.52$ $SD = 1.42$	4.21	< .001	.38
Warm	$M = 5.17$ $SD = 1.33$	$M = 4.17$ $SD = 1.46$	7.27	< .001	.66
Competent	$M = 5.81$ $SD = 1.02$	$M = 5.23$ $SD = 1.22$	5.01	< .001	.46
Praiseworthy	$M = 4.27$ $SD = 1.43$	$M = 4.12$ $SD = 1.36$	1.40	= .16	.13
Blameworthy	$M = 2.98$ $SD = 1.60$	$M = 3.26$ $SD = 1.59$	2.40	= .02	.30
Cares about	$M = 5.26$ $SD = 1.47$	$M = 4.26$ $SD = 1.56$	6.52	< .001	.59
Fairness	$M = 4.83$ $SD = 1.45$	$M = 4.39$ $SD = 1.39$	4.08	< .001	.37
Morally					
Correct					

Table 3d. Personal versus predicted evaluation among those who chose a willing Decider in Study 6.

Trait	Personal Evaluation	Predicted Evaluation	<i>t</i>	<i>p</i>	<i>d</i>
Emotional	$M = 4.28$ $SD = 1.90$	$M = 4.42$ $SD = 1.80$.67	= .51	.09
Logical	$M = 5.46$ $SD = 1.59$	$M = 5.20$ $SD = 1.44$	1.59	= .12	.22
Warm	$M = 5.56$	$M = 5.32$	1.24	= .22	.18

Competent	<i>SD</i> = 1.49 <i>M</i> = 6.22	<i>SD</i> = 1.30 <i>M</i> = 5.74	2.91	= .005	.41
Praiseworthy	<i>SD</i> = .91 <i>M</i> = 4.92	<i>SD</i> = 1.10 <i>M</i> = 4.92	.00	= 1.00	.00
Blameworthy	<i>SD</i> = 1.55 <i>M</i> = 2.36	<i>SD</i> = 1.58 <i>M</i> = 2.38	.09	= .93	.01
Cares about	<i>SD</i> = 1.56 <i>M</i> = 6.02	<i>SD</i> = 1.46 <i>M</i> = 5.72	2.05	= .05	.29
Fairness	<i>SD</i> = 1.25	<i>SD</i> = 1.46			
Morally	<i>M</i> = 5.56	<i>M</i> = 5.66	.59	= .56	.08
Correct	<i>SD</i> = 1.40	<i>SD</i> = 1.29			

Table 3e. Interaction between participant's own evaluation and other's evaluation of their partner choice decision in Study 6.

Trait	Self-evaluation: chose Willing	Self-evaluation: chose Able	Other evaluation: chose Willing	Other evaluation: chose Able	<i>F</i>	<i>p</i>	ηp^2
Emotional	<i>M</i> = 4.28 <i>SD</i> = 1.90	<i>M</i> = 2.91 <i>SD</i> = 1.78	<i>M</i> = 4.40 <i>SD</i> = 1.70	<i>M</i> = 3.58 <i>SD</i> = 1.83	2.37	= .12	.005
Logical	<i>M</i> = 5.46 <i>SD</i> = 1.59	<i>M</i> = 5.94 <i>SD</i> = 1.23	<i>M</i> = 4.61 <i>SD</i> = 1.76	<i>M</i> = 5.16 <i>SD</i> = 1.64	.05	= .83	.00
Warm	<i>M</i> = 5.56 <i>SD</i> = 1.49	<i>M</i> = 5.17 <i>SD</i> = 1.33	<i>M</i> = 4.55 <i>SD</i> = 1.28	<i>M</i> = 3.95 <i>SD</i> = 1.27	.67	= .41	.001
Competent	<i>M</i> = 6.22 <i>SD</i> = .91	<i>M</i> = 5.81 <i>SD</i> = 1.02	<i>M</i> = 4.78 <i>SD</i> = 1.52	<i>M</i> = 5.05 <i>SD</i> = 1.31	6.93	= .009	.01
Praiseworthy	<i>M</i> = 4.92 <i>SD</i> = 1.55	<i>M</i> = 4.27 <i>SD</i> = 1.43	<i>M</i> = 4.31 <i>SD</i> = 1.49	<i>M</i> = 3.79 <i>SD</i> = 1.51	.19	= .67	.00
Blameworthy	<i>M</i> = 2.36 <i>SD</i> = 1.56	<i>M</i> = 2.98 <i>SD</i> = 1.60	<i>M</i> = 2.75 <i>SD</i> = 1.54	<i>M</i> = 3.16 <i>SD</i> = 1.76	.37	= .54	.001
Cares about	<i>M</i> = 6.02 <i>SD</i> = 1.25	<i>M</i> = 5.26 <i>SD</i> = 1.47	<i>M</i> = 5.07 <i>SD</i> = 1.64	<i>M</i> = 3.41 <i>SD</i> = 1.67	8.19	= .004	.02
Fairness	<i>M</i> = 5.56	<i>M</i> = 4.83	<i>M</i> = 4.83	<i>M</i> = 4.01	.10	= .75	.00
Morally	<i>SD</i> = 1.40	<i>SD</i> = 1.45	<i>SD</i> = 1.46	<i>SD</i> = 1.47			
Correct							

Table 3f. Interaction between participant's own prediction and other's evaluation of their partner choice decision in Study 6.

Trait	Self-prediction: chose Willing	Self-prediction: chose Able	Other evaluation: chose Willing	Other evaluation: chose Able	<i>F</i>	<i>p</i>	ηp^2
Emotional	<i>M</i> = 4.42 <i>SD</i> = 1.80	<i>M</i> = 3.15 <i>SD</i> = 1.72	<i>M</i> = 4.40 <i>SD</i> = 1.70	<i>M</i> = 3.58 <i>SD</i> = 1.83	1.63	= .20	.003
Logical	<i>M</i> = 5.20	<i>M</i> = 5.52	<i>M</i> = 4.61	<i>M</i> = 5.16	.52	= .47	.001

	<i>SD</i> = 1.44	<i>SD</i> = 1.45	<i>SD</i> = 1.77	<i>SD</i> = 1.64			
Warm	<i>M</i> = 5.32	<i>M</i> = 4.17	<i>M</i> = 4.55	<i>M</i> = 3.95	.44	= .04	.009
	<i>SD</i> = 1.30	<i>SD</i> = 1.46	<i>SD</i> = 1.28	<i>SD</i> = 1.27			
Competent	<i>M</i> = 5.74	<i>M</i> = 5.23	<i>M</i> = 4.78	<i>M</i> = 5.05	8.38	= .004	.02
	<i>SD</i> = 1.10	<i>SD</i> = 1.22	<i>SD</i> = 1.52	<i>SD</i> = 1.31			
Praiseworthy	<i>M</i> = 4.92	<i>M</i> = 4.12	<i>M</i> = 4.31	<i>M</i> = 3.79	.88	= .35	.002
	<i>SD</i> = 1.58	<i>SD</i> = 1.36	<i>SD</i> = 1.49	<i>SD</i> = 1.51			
Blameworthy	<i>M</i> = 2.38	<i>M</i> = 3.26	<i>M</i> = 2.75	<i>M</i> = 3.16	2.02	= .16	.004
	<i>SD</i> = 1.46	<i>SD</i> = 1.59	<i>SD</i> = 1.54	<i>SD</i> = 1.76			
Cares about	<i>M</i> = 5.72	<i>M</i> = 4.26	<i>M</i> = 5.07	<i>M</i> = 3.41	.36	= .54	.001
Fairness	<i>SD</i> = 1.46	<i>SD</i> = 1.56	<i>SD</i> = 1.65	<i>SD</i> = 1.67			
Morally	<i>M</i> = 5.66	<i>M</i> = 4.39	<i>M</i> = 4.83	<i>M</i> = 4.01	2.44	= .12	.005
Correct	<i>SD</i> = 1.29	<i>SD</i> = 1.39	<i>SD</i> = 1.46	<i>SD</i> = 1.47			

Study 7

Having shown that partner choice decisions are also construed as moral decisions, we next explore whether such decisions are influenced by group norms. More specifically, we predict that people's partner choice decisions may follow a pattern of asymmetric conformity, such that people conform to the norm of choosing the willing partner but do not conform to the norm of choosing the able partner. This pattern could occur because people already intuit that the descriptive norm is to choose able partners, so explicitly informing people that such is the norm may not influence their decision. By contrast, it may be surprising to learn that the norm is to choose willing partners, which may in turn influence people's partner choice decisions. Additionally, an asymmetric effect could be the result of there being no reputational benefit of choosing able partners, but a reputational benefit of choosing willing partners. Thus, even when it is the norm to choose able partners, people may not conform to this behaviour given the lack of potential for reputational gain.

Methods

A total of 300 workers from Amazon Mechanical Turk were recruited to participate. A total of 25 participants (8.3%) were excluded based on preregistered exclusion criteria. This left a total of 275 responses (55% Male; Mean age = 36.65, $SD = 11.14$) to be analysed.

Our study consisted of three conditions with each participant being assigned to one of the three conditions. After reading about the two Deciders, participants were asked to choose which Decider they would like to have as their Decider in a new DG. One third of the participants were informed that the majority (percentages varied randomly between 65%-85%) of previous participants chose the able Decider, while the minority (percentages varied randomly between 35%-15%) of previous participants preferred the willing Decider. One third of the participants were informed that the majority (percentages varied randomly between 65%-85%) of previous participants chose the willing Decider while the minority (percentages varied randomly between 35%-15%) of previous participants preferred the able Decider. The final third of the participants were assigned to a baseline condition, in which they were not provided with any such information and were simply asked to choose between the willing and able Deciders. Before conducting this study, methods, hypotheses, and analysis plans were pre-registered and can be accessed at: <http://aspredicted.org/blind.php?x=rh6c7g>

Results

Participants in the baseline condition showed a slight preference for the able Decider over the willing Decider (59% vs. 41%), $\chi^2(1) = 2.78, p = .10, w = .17$. (One possible reason for why this comparison was not significant in this study is that in the previous studies we re-stated the amount of money each Decider had next to their name, but, in this study, we included the percentage of times each Decider was chosen, without re-stating the amount of money that each Decider had. Although participants were told in the study instructions how much money each

Decider had, the lack of reminder of the money next to the name may account for the slight decrease in preference for the able Decider.)

When informed that the majority chose the able Decider, participants continued to prefer the able over willing Decider (61% vs. 39%), $\chi^2(1) = 4.35, p = .04, w = .22$. But when informed that the majority chose the willing Decider, the preference for the able Decider disappeared (49% vs. 51%), $\chi^2(1) = .01, p = .92, w = .01$ (see Figure 5). Thus, the preference for the able over willing decider was disrupted when the descriptive norm was that most people choose the willing over able decider. Thus, it appears that while making salient the social visibility (Study 5 and 6) or the morality of choosing willing partners (Study 3) has little to no effect on partner choice, making salient the descriptive norm for choosing willing partners may affect partner choice. Specifically, when participants were informed that majority chose the willing decider, preference for the able decider decreased by 10% compared to baseline and decreased by 12% compared to when participants were told that majority chose the able decider. Although people chose the able over willing decider significantly more often in the able norm condition, and this preference was disrupted in the willing norm condition, the overall interaction between choice and condition was non-significant, $p = .26$.

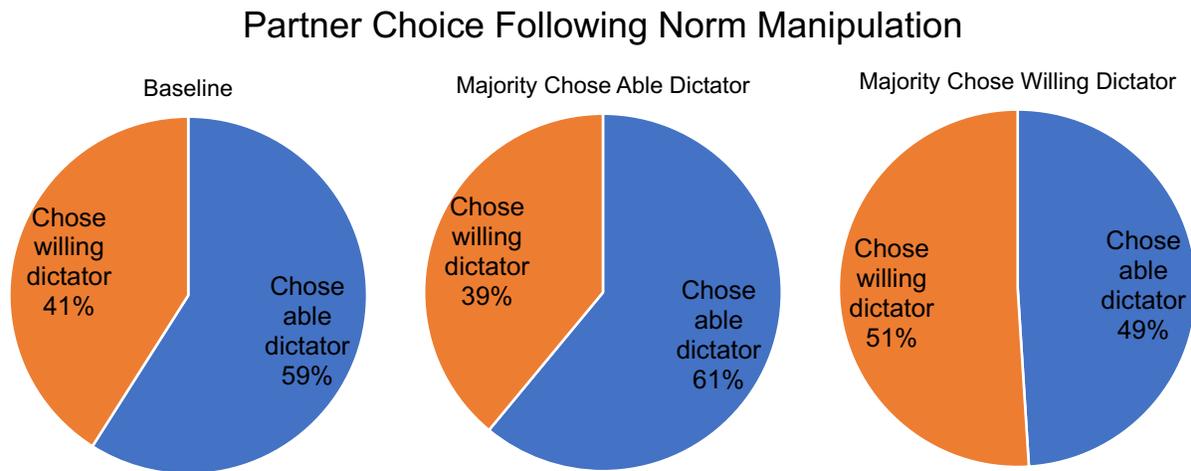


Figure 5. Change in participant partner choice after learning who majority of other participants chose.

Discussion

The results from Study 7 suggest that partner choice decisions may be influenced by social norms. More specifically, they suggest a possible asymmetric conformity effect such that partner choice decisions change when the norm is to choose willing partners but not to the same degree as when the norm is to choose able partners. Thus, we see here that the effect of preferring the able over willing decider is disrupted when the norm is to choose the willing decider. It should be noted, however, that the interaction between choice and condition was non-significant, and thus future research is needed to draw definitive conclusions. This potential asymmetric effect could be the result of different factors. First, although a substantial number of people choose willing partners, we have seen, across all studies thus far, that the baseline preference is to choose able partners (although the comparison was non-significant in this study). Thus, participants may already intuit this pattern; therefore, explicitly telling participants that the

majority chose the able Decider provides no new information. On the other hand, telling participants that the majority chose the willing Decider provides surprising information to participants and, as a result, participants increase their preference for willing partners.

Second, the results of Studies 1 and 2 demonstrate that people, irrespective of their own personal partner preference, view those who choose willing partners as being more moral. This suggests that there are no reputational benefits for choosing able partners, even amongst people who choose able partners for themselves. Therefore, the preference for able partners may not increase, even if it is the norm, which we saw in the results from this study. (With that said, there are other reasons for why someone might benefit other than reputationally, and making the costly, reputation-enhancing choice of choosing a willing partner when most people choose able partners may mean putting oneself at a short-term disadvantage financially). By contrast, there are great reputational benefits for choosing willing partners, particularly within an environment where most people also choose willing partners. While there is no social cost of choosing a willing partner in an environment where most people choose able partners, there is a large social cost for choosing an able partner in an environment where most people choose willing partners. Therefore, the preference for willing partners should increase if choosing willing partners is the norm, as observed here.

General Discussion

As a highly social species, humans have to successfully navigate their social interactions by finding the best partners. Sometimes this involves choosing between individuals who are more willing and individuals who are more able. Here, we demonstrate that many people opt for a partner who is more willing to cooperate, forgoing the immediate material gains of instead cooperating with someone who is more able. What explains this seemingly irrational behavior?

Across seven studies we provide a potential answer: Choosing willing over able partners affords reputational and partner choice benefits.

In Part I, we provided evidence of a second-order partner choice selection effect. In particular, in Study 1 we found that choosing a willing partner over an able partner (i) affords one a moral reputation, and (ii) makes one more likely to be chosen as a cooperation partner. In Study 2, we replicated this second-order partner choice selection effect using an incentivized experiment with real money at stake. Interestingly, we found that this preference held irrespective of people's own preference for able versus willing others. That is, even people who choose able partners for themselves prefer others who choose willing partners. Decades of research on social networks in humans shows that people connect with similar others (Byrne, 1961; Lazarsfeld & Merton, 1954; McPherson, Lydon, Jamieson, & Zanna, 1988; Smith-Lovin, & Cook, 2001), including those who share similar moral viewpoints (Dehghani et al., 2016; Motyl, Iyer, Oishi, Trawalter, & Nosek, 2014; Skitka, Bauman, & Sargis, 2005; Vaisey & Lizardo, 2010). Here we show that, when it comes to second-order partner choice decisions, people are not bound by homophily, indicating that this preference for those who choose willing over able partners may override the strong desire to associate with similar others. In Study 3, we found that choosing willing partners adheres to expectations for how a moral person will behave, and in Study 4 we found that making such a choice can be deemed the morally correct action.

In Part II, we expanded upon these results by probing the moderators of the effect found in Part I. In particular, we tested two main influences on the second-order partner choice selection effect: (i) the influence of social visibility (Studies 5 & 6) and (ii) the influence of norms (Study 7). We found evidence that partner choice decisions may be sensitive to social norms but not social visibility (see Kraft-Todd, Yoeli, Bhanot, & Rand 2014 for a review on the

effect of social norms and social visibility on cooperative behaviour). However, evidence for the null effect of social visibility was relatively weak: in both Studies 5 and 6, people trended toward increasing their choice of the willing partner when their decision was public. In these studies, we also found that people recognized that when they themselves choose willing partners they are signaling their morality, though they also mispredict the magnitude of the signal. This serves as the first investigation into individuals' meta-judgments of their partner choice decisions and adds to the growing literature on the accuracy of meta-judgments (Lees & Cikara, 2019; Rom & Conway, 2018; Saguy & Kteily, 2011; Waytz, Young, & Ginges, 2014). We also examine whether partner choice is an honest signal and, critically, we find that, across all DG transfer decisions in the present studies, those who choose willing partners behaved more generously, suggesting partner choice decisions may serve as an honest signal of generosity.

In total, our findings suggest that, from an ultimate perspective, the tendency to value willingness when making partner choice decisions may be understood within a reputation-based framework (Jordan & Rand, 2019). Although people have more to gain materially in the short-term from partnering with a more able partner, people have more to gain reputationally from partnering with a more willing partner. Our findings suggest that these reputational benefits translate into cooperative benefits, with those choosing willing partners more likely to be chosen as cooperation partners in subsequent interactions. Importantly, we find that choosing a willing partner appears to be an honest signal—those who choose willing partners actually behave more willingly in subsequent interactions.

Parallels with Third-Party Punishment

These results parallel recent discoveries within the domain of third-party punishing. Both partner choice and punishment can promote cooperation, via the threat of social rejection

(Barclay & Willer, 2007; Baumard, Andre, Sperber, 2013; Fu, Hauert, Nowak, & Wang, 2008) and via the threat of sanctions (Balliet, Mulder, Van Lange, 2011; Fehr & Gächter, 2000; Mathew & Boyd, 2011), respectively. In both contexts these costly behaviours are adaptive in part because they provide the chooser (as shown here) or punisher (Barclay, 2006; Jordan, Hoffman, Bloom, & Rand, 2016; Nelissen, 2008; Raihani & Bshary, 2015a) with reputational benefits. Furthermore, choosing a willing partner and choosing to engage in third-party punishment (Jordan, Hoffman, Bloom, & Rand, 2016) both appear to be honest signals of morality. Finally, similar to how third-party punishers do not receive larger transfers in the DG (Horita, 2010, but see Raihani & Bshary, 2015b), those who choose willing partners in our study similarly did not receive larger transfers in the DG, suggesting that choosing willing partners does not elicit monetary rewards. That said, the increase in social partnerships may mean a larger accumulation of monetary rewards over time.

We also found that people's partner choice decisions may follow a pattern of asymmetric conformity when they are presented with normative information about others' partner choice decisions. This may suggest that people adjust their partner choice decisions depending on the moral climate they inhabit. If the majority of other individuals also favor willingness over ability, some people who originally would have favored ability may adjust their decisions to what is deemed morally normative. This finding that partner choice decisions are influenced by social norms also aligns with research on punishment that has demonstrated that people's punitive decisions are influenced by social norms (Otto, FeldmanHall, & Phelps, 2018; Patil, Dhaliwal, & Cushman, 2018; Salali, Juda, & Henrich, 2015; Son, Bhandari, & FeldmanHall, 2019).

Another parallel is that people are able to anticipate what they are signaling via both their third-party punishment decisions (Patil, Dhaliwal, & Cushman, 2018) and, as we show, their

partner choice decisions. We demonstrate that people accurately predict that observers will judge them less positively for choosing to partner with able over willing partners, mirroring other research showing that people accurately predict that they will be judged less positively when choosing to punish a violator versus compensate a victim (Patil, Dhaliwal, & Cushman, 2018).

Although we found that partner choice decisions are sensitive to normative information, we found they are not sensitive to social visibility. This null effect may be due to the artificial nature of our manipulation of social visibility, given that other research has also found cues of artificial surveillance to have no effect on altruistic behaviour in both charity donations and economic games (Northover, Pederson, Cohen, & Andrews, 2016). Alternatively, this finding may parallel recent research on moral outrage and punishment, revealing that such decisions, when made by less deliberative individuals, are insensitive to social visibility (Jordan & Rand, 2019). Given that people evolved in environments where such decisions were always public, it appears that people who rely more on heuristics tend to be concerned about the reputational effect of punishing even when their decisions are actually anonymous (Jordan & Rand, 2019). Throughout human evolution it may have been even more difficult for one's partner choice decisions to be kept private, and therefore people may similarly be concerned about the reputational effect of their partner choice decisions even when their decisions are anonymous. To test this, future research should examine whether more deliberative types of individuals show greater sensitivity to anonymity during their partner choice decisions, presumably because such individuals reflect more on the specific situation at hand and recognize that their reputation is not actually at stake (Jordan & Rand, 2019).

Ability versus Willingness

Drawing on previous research (Raihani & Barclay, 2016), we operationalized an able individual as one who is relatively rich yet relatively selfish, and we operationalized a willing individual as one who is relatively poor yet relatively generous. This allowed for a precise examination of the trade-off between ability and willingness. It is important to note that the willing partner was only relatively less able, not completely incapable. It is unlikely that the results reported here would occur if the willing partner was completely incapable, given that people would have no incentive to choose such a partner. Of course, this dichotomy between a willing yet less able partner or a selfish yet more able partner does not obtain in every circumstance; a partner may be both willing and able or selfish and unable. On the other hand, current work explores whether those who already hold a high level of market value due to having various traits and abilities (e.g., wealth, physical attractiveness, power, having a moral license) also engage in less generous behaviour (Barclay & Reeve, 2012; Guinote, Cotzia, Sandhu, & Siwa, 2015; Munoz-Reyes, Pita, Arjona, Sanchez-Pages, Turiegano, 2014; Shinada & Yamagishi, 2014; Righetti, Luchies, van Gils, Slotter, Witcher, & Kumashiro, 2015; Blanken, van de Ven, Zeelenberg, 2015). Some research suggests that rich individuals are less generous than poor individuals (Piff et al., 2010), specifically in states that have large economic inequality (Cote, House, & Willer, 2015). However, attempts to replicate this finding, including analyses using a large representative dataset from over 30 countries, failed to find the effect (Andreoni, Nikiforakis, & Stoop, 2017; Korndorfer, Egloff, & Schmukle, 2015; Stefan, Schmukle, Korndorfer, & Egloff, 2019; von Hermann & Tusic, 2019).

This comparison between willing individuals and able individuals relates to the two dimensions of warmth and competence that are often examined in person perception research (Abele, Cuddy, Judd, & Yzerbyt, 2008; Fiske, 2012; Fiske, Cuddy, & Glick, 2007; Judd, James-

Hawkins, Yzerbyt, & Kashima, 2005). Although similar, we note that the willing actor in our experiment is technically exhibiting only generosity and not necessarily warmth, more broadly construed, and the able partner is not demonstrating any skill but rather the ability to benefit others (Brambilla, Rusconi, Sacchi, & Cherubini, 2011; Brambilla, Sacchi, Rusconi, Cherubini, & Yzerbyt, 2012; Goodwin, Piazza, & Rozin, 2014; Leach, Ellemers, & Barreto, 2007). That said, we did examine perceptions of warmth and competence, and found that being a willing partner and choosing willing partners both signal warmth, while being an able partner and choosing an able partner both signal competence.

Economic Decision-Making

Our research contributes to a long line of scholarship documenting how human economic decision-making departs from the canonical economic model of self-interest (Camerer 2003; Fehr, Fischbacher, & Gächter, 2002; Hoffman, McCabe, & Smith, 1998; Kahneman, Knetsch, & Thaler, 1986; Roth 1995). For example, economic models predict that people will share 0% in the DG. Instead numerous studies, including ours, have documented people's willingness to be generous in the DG, with people from both large- and small-scale societies sharing on average between 20% and 30% of their endowment (Henrich et al., 2001, 2005). Our findings contribute to this line of research by showing that people not only show a willingness to be generous in their interactions with others, but also i) value those who have shown a willingness to be generous to others, and ii) value those who value others who have shown a willingness to be generous. Of course, we also find results consistent with standard economic models: although individuals prefer partners who value generosity, the majority of people in our studies chose to partner with the able over willing partner.

Relatedly, previous research has documented how offers in the DG vary across cultures (Henrich et al., 2001, 2005). Future research should examine whether the second-order signaling effect also varies cross-culturally. For example, individuals from cultures that make larger offers in the DG may also be more likely to value those who choose willing over able partners. Similarly, DG decisions, and the judgments of such decisions, may also differ depending upon whether they exist within the context of a one-shot or repeated interaction. While the tendency to choose willing partners in the one-shot interaction of the DG is seemingly irrational, the choice of a willing over an able partner for a repeated social interaction could be seen as less irrational. For example, when choosing a friend, one might be seen as less irrational for choosing a partner who is willing, even if they have fewer resources to share at a given time because i) they may be valued for other non-financial reasons (e.g. companionship) and ii) if such a friend happens to become more able over time, they would benefit from having a partner who is both able and willing. Thus, it would be valuable for future research to explore our hypotheses across other contexts, including contexts that entail repeated interactions.

Limitations and Future Directions

Economic games, such as the DG, have been used in hundreds of experiments across a diverse array of human populations (Camerer 2003; Fehr, Fischbacher, & Gächter, 2002; Hoffman, McCabe, & Smith, 1998; Kahneman, Knetsch, & Thaler, 1986; Roth, 1995), as well as in experiments on chimpanzees (Bueno-Guerra, Völter, de las Heras, Colell, & Call, 2019). These games allow for experimenters to avoid the inherent idiosyncratic nature of vignette studies and thus aid in the potential generalizability of experimental findings. Furthermore, these games provide the opportunity for experimenters to observe human behaviour when real money is at stake, supporting the external validity of the findings. With that said, given the low stakes

and artificial nature of economic games, the external validity afforded by this methodology could be enhanced. Pending future work, we note here that other research has documented a correlation between behaviour in economic games and behaviour in contexts such as donating to charities and returning lost money (Benz & Meier, 2008; Franzen & Pointner, 2013; Stoop, 2014).

We note here additional approaches to operationalizing willingness and ability. Future research should test the present account by comparing, for instance, someone who is relatively skillful yet relatively unhelpful to someone who is relatively unskillful yet relatively helpful. Do people receive similar kinds of reputational benefits for choosing helpful over skillful individuals as partners? (Of course, skillfulness also falls under the purview of the construct of competence, and thus in order to conduct a strict comparison of willingness to provide benefits and ability to provide benefits we did not investigate skillfulness in this research). Relatedly, future research should explore whether the second-order signaling effect replicates using other economic games such as the Trust Game, Ultimatum Game, and the Third-Party Punishment Game. Perhaps people who choose partners who are more trustworthy in the Trust Game, more generous in the Ultimatum Game, and more punitive in the Third-Party Punishment Game, are in turn more likely to be viewed as more moral, revealing the documented effect to exhibit context sensitivity. Lastly, future could examine potential moderators of the signaling effect of choosing able versus willing partner. For example, reputational effects may vary depending on i) the chooser's perceived closeness to the partner, ii) the characteristic of the chooser's other partners, and iii) the willingness of the chooser to condemn the partner while still maintaining the relationship (Nalick, Kuban, Hill, & Ridge, 2019).

Given that people are aware of the reputational benefits that result from choosing willing partners, our findings also raise the question of why some people choose to forgo receiving such

reputational benefits by instead choosing to partner with able others. Of course, able partners can provide greater material benefits, but what is the individual difference that determines why some people favor ability and some people favor willingness? Drawing on costly signaling theory (Gintis, Smith, & Bowles, 2001; Grafen, 1990; Roberts, 1998; Zahavi, 1975), our findings suggest that it may be the case that it is costlier for less-generous individuals to partner with willing others. Indeed, we find that less-generous individuals were less likely to value willingness over ability when choosing partners. This distinction between types of individuals is at the heart of costly signaling theory; the act of choosing willing over able partners has to be differentially costly for different types of individuals. Although the honest signaling effect that we demonstrate across our studies is what would be predicted from our conceptual model, it would be useful for future research to formalize our conceptual model and further substantiate it using agent-based modeling.

Conclusion

Choosing partners can be challenging and costly. Often, individuals value a partner's willingness over their ability to deliver benefits, even when choosing the willing partner is immediately costly. Why would people make the costly decision to partner with someone who has less? Here, we provide evidence for an ultimate explanation: people who choose a willing partner are more likely to gain a moral reputation and are more likely to be chosen themselves as cooperation partners. Furthermore, in such cooperative interactions, those who choose willing partners are in fact more cooperative with others. Taken together, our findings provide a functional account for why some individuals make the costly decision to value willingness over ability when making partner choice decisions.

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