Examining the Effect of Social Distance on Financial Decision-Making

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Abstract

Previous studies show the role emotion plays in decision making, including financial decisions. Construal-level theory suggests that individuals draw on more cognitive and less emotional thought processes with increased social distance. Building on these links, this study finds investors are less vulnerable to the influence of emotions on their financial decisions as an increasing function of the social distance between the decision maker and the decision target. Results from five experiments show that investors were significantly more willing to take risk and more inclined to discount future rewards when investing on behalf of themselves than for decision targets at various degrees of social distance from oneself. The findings are robust to use of both hypothetical and incentive-compatible tasks and are evident based on both between-subjects and within-subjects designs. Finally, we find social distance mediates the relationship between decision target and risk-taking.

Introduction

A growing literature suggests that investors are prone to making financial decisions that can be adversely affected by their human characteristics, leading at times to sub-optimal outcomes (e.g., people spend too much in the present rather than save enough for the future); see Barberis and Thaler (2003). Although some evidence suggests that financial knowledge and experience may help moderate these tendencies, enabling people to make more "rational" decisions, even highly experienced professionals can be influenced to some extent by psychological biases when making financial decisions. A consideration that is to date unexplored in the literature is whether people are able to make financial decisions that are relatively unencumbered by behavioral biases when making decisions on behalf of someone else, resulting in greater adherence to optimal investing principals, than when managing their own financial welfare. We base this question in Construal Level Theory, which suggests that individuals draw on more cognitive and less emotional thought processes when engaging in activities separated by time, space, or social distance from the here and now. Specifically, we ask whether investors are less vulnerable to the influence of emotional factors on their financial decisions when deciding for others as opposed to themselves. Our findings suggest a significant and robust difference in decisions made for oneself versus others: participants take more financial risk and discount future payoffs more steeply when deciding for themselves relative to deciding for others. Further, we find evidence that suggests the willingness to take financial risk and degree of discounting vary with the amount of social distance between oneself and the decision target (with the most supportive results coming from the final study we conducted, which is likely the best at helping participants identify decision targets at a specific social distance from oneself).

Theoretical Background

Biases in investor financial decision-making. Over the last several decades, dozens of papers have documented the tendency for investors to act in ways that run counter to what rational economic models might predict. People, for example, discount future rewards at an excessive rate relative to rewards closer to the present (Kirby and Maraković, 1995) and sell well-performing stocks while holding on to poor-performing ones (known as the disposition effect; see Shefrin and Statman, 1985; Odean, 1998; and Grinblatt and Keloharju, 2001).

The causes and antecedents of such behavioral tendencies are many. To some extent, incidental behavioral cues can hold an undue influence on financial decision-making, with a variety of environmental factors having been show to affect individuals' financial decisions and ultimately financial markets. For example, Hirshleifer and Shumway (2003) found that stock returns were higher on sunny days in New York, which they propose arises due to investors misattributing their feelings to promising economic considerations instead of the good weather. Kamstra, Kramer, and Levi (2003, 2008) found an association between hours of daylight and stock market returns, which they attribute to seasonal changes in risk aversion due to seasonal depression. Kamstra, Kramer, and Levi (2000, 2002) found stock returns were lower, on average, on the Monday after a daylight-saving time change, ostensibly due to an increase in anxiety associated with changes in amount of sleep. Further, Edmans, Garcia, and Norli (2007) demonstrated a country's stock market returns were lower immediately following a team's loss in international sports tournaments such as the World Cup, contributing to an existing literature that shows sports fans become more optimistic (pessimistic) in response to wins (losses) in their teams' matches.

Other factors that lead to behavioral biases are more innate to the individual. To take just

a few examples, prior research has suggested that individuals have difficulty, among other things, considering probabilities (Peters, Vastfjall, Slovic, Mertz, Mazzocco, and Dickert, 2006), which can lead to problematic investment decisions (e.g., Lusardi, 2012). They also fail to identify with and take the perspective of their future selves, causing a tendency to opt for smaller rewards that can be obtained immediately rather than wait for larger rewards that come at a delay (Bartels & Rips, 2010; Ersner-Hershfield et al., 2009). And, people feel losses more acutely than gains of the same magnitude, leading to loss aversion (Kahneman and Tversky, 1979).

Here, we examine a different, albeit, complementary factor that can contribute to behavioral biases in the domain of financial decision-making. Namely, we ask whether social distance – which acts as a proxy for reducing emotional involvement – might affect the tendency to make sub-optimal financial choices. We motivate our predictions using Construal Level Theory (CLT; Liberman, Trope, and Wakslak, 2007; Trope and Liberman, 2010).

Construal Level Theory and decision-making. In Construal Level Theory, people think about objects, events, or decisions relative to the here and now. Thinking beyond what is present in the moment requires an individual to engage in different acts of mental construal. Objects or events that are psychologically "distant" (e.g., further away in space or time) are considered at a higher or more abstract construal level, while those that are psychologically closer (e.g., nearby physically or close in time) are considered at a lower, or more concrete construal level. To take a clichéd but informative example, from a distance people see the forest (an abstract concept), and up close they see the trees, which are more detailed and concrete. Furthermore, previous research indicates that concrete / low construal levels translate into affective (i.e., emotional or feelings-based) ways of thinking (e.g., focusing on the taste of a marshmallow), whereas abstract / high construal levels translate into more cognitive ways of thinking (e.g., focusing on the color and

texture of the marshmallow) (Leiser, Azar, and Hadar, 2008; Metcalfe and Mischel, 1999).

In CLT, psychological distance can be measured along several dimensions, including time, space, social, and probability. Consider the time dimension of psychological distance in the context of eating. When pre-committing on what to eat in the future (i.e., next week), one is more likely to choose a meal that is healthy but less appealing to the senses (due to cognitive thinking trumping emotional thinking in a high-construal level context), but in deciding what to eat right now, taste will more likely outweigh health, leading for instance to a dinner consisting of nachos and cheese instead of broccoli and grilled tofu.

On a broad level, Fujita and colleagues (e.g., Fujita and Carnevale, 2012; Fujita, Trope, Liberman, and Levin-Sagi, 2006) have examined how high levels of construal can promote self-control. Within the domain of financial decisions, recent work has assessed how the time dimension of psychological distance is related to saving behavior. When facing a decision regarding how much money to save from a monthly paycheck, one must make tradeoffs between the concrete pain of sacrificing present consumption for the abstract distant future potential benefit of having saved for retirement. People often have difficulty making these sacrifices, resulting in underfunded retirements (Loewenstein and Thaler, 1999), which is part of a broader tendency to excessively discount future rewards (e.g., Laibson, 1997). In an effort to override this natural tendency, Thaler and Benartzi (2004) developed a method in which employees can precommit to save for retirement by allocating a portion of their future salary raises rather than their present earnings. By pushing the costs to the future, the program lessens the emotional impact of the sacrifice, making those costs seem more abstract. In practical terms, increasing the distance between the here and now and future costs has results in an estimated $7.4 billion in additional annual savings (Benartzi and Thaler, 2013).

The above application pertains to the time dimension of psychological distance, but relatively little attention has been paid to the social dimension of distance as it relates to financial decision-making. In CLT, social distance is self-centric, so individuals in the following categories are increasing in their social distance from oneself: close relatives, friends, coworkers, fellow citizens, and foreigners (see Bogardus, 1926, for an early treatise on the concept of social distance). Analogous to the time dimension, the closer someone is in a social sense, the more concrete, low-level, and affective is the construal level, and the more socially distant someone is, the more abstract, high-level, and cognitive is the construal level. In this vein, Rachlin and Jones (2006) found that when given the option keep a large sum of money or share it, research participants engaged in a form of social discounting and demonstrated decreasing levels of generosity with increasing levels of social distance (see Simon, 1995, for a philosophical discussion of social discounting).

Social distance and financial decision-making. Applying the social dimension of psychological distance to the context of financial decision-making, and building on the ability of the time dimension to explain behavioral tendencies such as hyperbolic discounting (Maglio, Trope, and Liberman, 2013; Zauberman, Kim, Malkoc, and Bettman, 2009), we posit that with emotions playing such an integral role in so many behavioral tendencies (e.g., Kahneman, 2003; Loewenstein and Lerner, 2003; Lerner, Li, Valdesolo, and Kassam, 2015), an individual's financial decisions will be more prone to biases when social distance is small (since low construal level and emotional processing go hand in hand). Notably, Chang and Pham (2013) have shown that more visceral, impatience-inducing emotions decay as temporal distance (which as indicated earlier, is related to social distance) increases. Although some emotions are not subject to decay with social distance (e.g., happiness, sadness), other emotional states that could

have a large impact on interpersonal decision-making do in fact seem to be blunted with greater social distance (e.g., guilt, shame; Agerström, Björklund, and Carlsson, 2012). Furthermore, recent work suggests that with a higher level of construal (i.e., greater distance), the bodily cues that arise from emotional states (and which normally have a strong influence on decision-making) are not given as much weight (Maglio and Trope, 2012). Taking all of these findings into account, we hypothesize that when making decisions with increasing social distance, investors' preferences will be less emotionally driven, and more in line with rational models of economic behavior.

Recent work in behavioral finance provides tangential support for the idea that social distance improves decision-making, or at least moves decisions to be more in line with what a rational actor might do. Namely, Shapira and Venizia (2001) examined the trading accounts of clients at an Israeli brokerage house, and found that the holder of the average account exhibited the disposition effect, whereby people tend to sell well-performing stock sooner than poor-performing stock, to their financial detriment. However, account holders who had sought professional investment advice were less prone to this disposition effect. This observation is at least consistent with the possibility that the individual providing advice was able to make recommendations that were based on more abstract, high-level, cognitive thinking and less on concrete, low-level, affective thinking, due to the social distance between them and the account holder. Indeed, Polman and Emich (2011) have found that choices made for others are more abstract and more creative. More directly related, Amanatullah and Morris (2010) find that gender differences in negotiation arise as a function of women being more fearful of negative backlash from acting assertively, but that these differences disappear when women negotiate on behalf of someone else. Put another way, greater social distance leads female negotiators to act

more in line with a rational actor model of competitive negotiation. Finally, recent work has found that research participants assume others will act more patiently in a variety of temporal discounting tasks compared to themselves (Pronin, Olivola, and Kennedy, 2008).

The research cited above, while suggestive, is inconclusive on whether social distance can truly affect financial decisions. In the current research, we explore this relationship by examining two well-documented investor tendencies that are rooted in emotion: financial risk-taking and temporal discounting. Our experimental approach is to have participants make decisions on behalf of themselves (lowest construal level), as well as on behalf of individuals with increasing social distance: a family member, a co-worker, and a stranger or client (where we always define a client as "someone who would pay you to make choices for him or her"). We study these behaviors using both between- and within-subject designs. We test our central hypothesis by examining whether investor behavior changes in a predictable way with increasing social distance.

Overview of Research

A handful of recent studies examine decisions made on behalf of self versus other,[1] but several features distinguish our study. First, we focus on basic building blocks of financial decisions (risk aversion and -- uniquely -- discounting across various decision targets) whereas these other studies focus on risk aversion, and often with the main purpose of examining loss aversion or myopic loss aversion. Although there may be some components of temporal discounting that draw on risk sensitivity (e.g., Andersen, Harrison, Lau, and Rutstrom 2008), previous research has suggested that they are in fact independent constructs (e.g., de Water, Cillessen, and Scheres, 2014). As such, it remains an open question whether risk preferences that

[1] See Hsee and Weber (1997), Daruvala (2007), Charness and Jackson (2009), Reynolds et al. (2009), Sutter (2009), Bolton and Ockenfels (2010), Eriksen and Kvaløy (2010), Pahlke et al. (2010), Chakravarty et al. (2011), Leonhardt, Keller, and Pechmann (2011), Montinari and Rancan (2013), Atanasov (2015), and Andersson et al. (2016).

arise from choosing on behalf of others would also manifest in contexts when making intertemporal tradeoffs for others. Given the many scenarios in which people must make intertemporal decisions on behalf of others (e.g., financial advisors choosing investment portfolios, family members helping with end-of-life choices, or parents making any number of decisions on behalf of their children), it seems imperative to investigate how decisions made on behalf of others in intertemporal contexts differ from decisions made for oneself. Second, our study also measures risk aversion using the type of question in a potentially more ecologically valid way than that employed by previous research. Namely, we use a risk aversion measure that appears in Know Your Client questionnaires widely employed by financial professionals who make decisions on behalf of clients, whereas these other studies typically employ multiple price lists or model investment decisions using scenarios related to Dictator Games. Finally, we employ a wider range of "other" decision targets than these other studies, and in our final study we use an identification method which helps ensure the decision target a given participant has in mind when making a particular decision is a specific degree of social distance away from herself/himself. That is, as a way of more cleanly measuring (and manipulating perceived social distance), we introduce a numeric scale to control for the social distance associated with different decision targets.

Study 1

Our first study had a straightforward objective: to examine whether research participants would show different discounting patterns as a function of the person for whom they were making such choices. To this end, participants were randomly assigned to one of four conditions in which they made choices on behalf of themselves, a family member, a co-worker, or all three targets. Given the reduction in emotional distance between the self and others, we hypothesized

that participants would act in more patient manners when choosing on behalf of themselves compared to others.

Method

Participants were 209 Mechanical Turk workers (*M*age = 32.41, *SD* = 10.57 years; 79 women) and were paid $.30 for participating. Forty-one participants (19.6% of the sample) failed the Instructional Manipulation Check, and were excluded from further analyses, leaving a final sample of 168 participants.

After completing an online consent form, participants took part in a modified version of Kirby and Maracović's (1996) temporal discounting task. The original questionnaire included 21 items that pitted smaller-sooner rewards (e.g., $27 that one could receive tonight) against larger-later rewards (e.g., $30 that one could receive in 35 days). Given that participants were going to be answering these questions for themselves, a family member, and a co-worker, we modified the original questionnaire so that only 10 items representative of all of the discount rates from the original questionnaire were included.

Participants were first asked to imagine that they were making the choices for themselves and were instructed to choose as if "you would actually get the money tonight (if you choose the option on the left-hand side) or as if you would actually get the money in the specified time (if you choose the option on the right-hand side)." Participants then made choices between ten pairs of smaller-sooner versus larger-later options. Next, participants made the same choices (presented in a random order) for a family member, and then again for a co-worker. In both cases, we instructed participants to imagine that the specified person would actually get the money right away (if they chose the smaller-sooner option) or at a specific time in the future (if they chose the larger-later option).

Finally, participants completed demographics questions and a Instructional Manipulation Check, in which they were given a list of activities but asked to simply choose the box labeled "other" and write the letter "g" (IMC; Oppenheimer, Meyvis, & Davidenko 2009).

Results & Discussion

To determine whether participants discounted future rewards at a different rate depending on the target of those rewards, we conducted a repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker). To calculate temporal discounting, we took two approaches. First, we simply summed the number of larger later rewards chosen, a method used by previous researchers (e.g., Magen, Gross, & Dweck, 2008) and one that is highly correlated with a more traditional measure of temporal discounting such as *k*. Second, we calculated the hyperbolic discount rate, *k*, for each set of intertemporal choices. We followed Kirby and Maracović's (1996) guidelines for calculating *k,* with one exception: we did not exclude participants who chose either all smaller-sooner or all larger-later rewards, and instead, just assigned them the highest or lowest discount rate, respectively. Correlations among summed scores and *k* values were all very high: (Self scores: $r(168) = -.99$, $p < .001$; Family scores: $r(168) = -.99$, $p < .001$; Co-worker scores: $r(168) = -.98$, $p < .001$).

Analyses using summed larger later scores. Results indicated that there were in fact significant differences among discounting across the three targets, $F(2, 166) = 13.30$, $p < .001$. Follow-up paired-samples *t*-tests demonstrated that participants discounted future rewards significantly more (i.e., they chose fewer larger-later rewards) when the target was themselves ($M = 3.93$, $SD = 3.35$) compared to when the target was a family member ($M = 4.84$, $SD = 3.68$), $t(167) = -4.38$, $p < .001$, or a co-worker ($M = 5.08$, $SD = 3.74$), $t(167) = -4.84$, $p < .001$. There were no differences between choices for the family member and the co-worker, $t(167) = -1.23$, p

= .22. (For ease of reference, in Table 1 we summarize scores and standard deviations for each decision target in each study. We summarize comparisons for pairwise tests for each study in Table 1 as well.)

INSERT TABLE 1 HERE

Analyses using *k*. Due to the skewed distribution of *k* values, we first log-transformed each *k* score before conducting analyses. In line with results from the summed score index, results indicated that there was a significant difference across the three targets for *k* values, $F(2, 166) = 10.14$, $p < .001$. Follow-up paired-samples *t*-tests demonstrated that participants discounted future rewards significantly more (i.e., they showed a steeper discount rate) when the target was themselves ($M = .018$, $SD = .012$) compared to when the target was a family member ($M = .016$, $SD = .013$), $t(167) = 3.89$, $p < .001$, or a co-worker ($M = .016$, $SD = .013$), $t(167) = 4.10$, $p < .001$. There were no differences between choices for the family member and the co-worker, $t(167) = .79$, $p = .43$.

Studies 2a and 2b

Study 1 involved hypothetical choices, and so in Studies 2a and 2b, participants made choices for rewards that they could actually obtain, as opposed to hypothetical rewards. Although prior research has indicated that reward type (hypothetical versus real) does not affect discount rate (Madden, Begotka, Raiff, and Kastern 2003), given the potential disconnect between intentions and behavior, we nonetheless felt it important to examine our effects in the context of incentive-compatible choices. Accordingly, in both Studies 2a and 2b, we employed a within-subjects design where participants made intertemporal choices for rewards that would either accrue to themselves, a family member, a co-worker, or a client (again, where "client" was defined for the participant as "someone who would pay you to make choices for him or her"). In

Study 3a, all participants made these choices in this order. It is possible, however, that research participants might assume that because they are making choices in this order, they should be choosing in such a way that changes across the targets. To address this issue, in Study 3b, we randomized the presentation of the decision blocks, so that some participants chose first for themselves, whereas others first chose for the co-worker, etc.

Method

Participants

Study 2a. Three hundred and three Mechanical Turk workers (M_{age} = 33.67, *SD* = 11.25 years; 132 women) participated for $.30. Fifty-one participants (17.2% of the sample) failed the Instructional Manipulation Check and were excluded from further analyses, leaving a final sample of 251 participants.

Study 2b. Four hundred and sixteen Mechanical Turk workers (M_{age} = 32.60, *SD* = 10.12 years; 158 women) participant for $.30. Seventy-seven participants (18.5% of the sample) failed the Instructional Manipulation Check and were excluded from further analyses, leaving a final sample of 339 participants.

Procedure

After completing an online consent form, participants were first told that they would be making a series of choices regarding money that could be receive now versus money that could be received later (e.g., $8 now versus $12 in two weeks). We instructed participants that they would be making these choices on behalf of themselves, a family member, a coworker, and a client. We further instructed participants that in order to make these choices realistic, we would pick 5 people for whom we would pick one of their choices at random and actually pay that amount in the time specified. If a trial was picked in which the participant chose for a family

member or co-worker, we informed participants that we would follow up with them so that they could give that person's contact details. If a client was chosen, participants were instructed that it would be someone chosen by the experimenters.

Participants were then asked to briefly summarize the instructions to confirm that they understood the nature of the incentive-compatible task. In Study 2a, participants then made the same 10 temporal discounting choices from Study 1 for themselves, then a family member, a co-worker, and finally, a client. In Study 2b, however, the order of these questions was randomized across participants.

Results & Discussion

Study 2a

Analyses with Summed Scores. A repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker, client) indicated that there were significant differences in discounting behavior across the four targets, $F(3, 248) = 23.03$, $p < .001$. Follow-up paired samples *t*-tests revealed that participants chose fewer larger-later rewards for themselves ($M = 4.01$, $SD = 3.52$) than they did for the family member ($M = 5.85$, $SD = 3.51$), co-worker ($M = 5.36$, $SD = 3.60$), and client ($M = 6.14$, $SD = 3.36$), all ts > 4.06, all ps < .001. Participants discounted future rewards significantly more for co-workers than they did for family members and for clients, ts > 3.09, $p < .002$. Finally, there were no differences between discount rates for family members and clients, $t(250) = 1.54$, $p = .13$.

Analyses with *k*. A repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker, client) indicated that there were significant differences in discounting behavior across the four targets, $F(3, 248) = 21.84$, $p < .001$. Follow-up paired samples *t*-tests revealed that participants discounted future rewards more steeply for themselves

(M = 0.016, SD = 0.012) than they did for the family member (M = 0.012, SD = 0.011), co-worker (M = 0.014, SD = 0.012), and client (M = 0.011, SD = 0.011), all ts > 3.82, all ps < .001. Participants discounted future rewards significantly more for co-workers than they did for family members and for clients, ts > 2.88, p < .004. Finally, participants discounted future reward significantly more for family members than they did for clients, $t(250) = 2.06$, $p = .04$.

Study 2b

Analyses with Summed Scores. As in Study 2a, a repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker, client) indicated that there were significant differences in discounting behavior across the four targets, $F(3, 336) = 7.43$, $p < .001$. Follow-up paired samples t-tests revealed that participants chose fewer larger-later rewards for themselves (M = 4.86, SD = 3.53) than they did for a family member (M = 5.37, SD = 3.42), a co-worker (M = 5.19, SD = 3.51), or a client (M = 5.52, SD = 3.44), all ts > 2.03, ps < .05. There were no differences between choices made for a family member and a client or a coworker, ts < 1.37, ps > .17. Participants did, however, discount less for a client than they did for a co-worker, $t(338) = 2.17$, $p = .03$.

Analyses with *k*. A repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker, client) indicated that there were significant differences in discounting behavior across the four targets, $F(3, 336) = 5.64$, $p < .001$. Follow-up paired samples t-tests revealed that participants discounted future rewards significantly more for themselves (M = 0.015, SD = 0.012) than they did for a family member (M = 0.014, SD = 0.011) or a client (M = 0.013, SD = 0.011), ts > 3.20, ps < .002, and on a trend level, more than for a co-worker (M = 0.014, SD = 0.012), $t(338) = 1.70$, $p = .09$. There were no differences between choices made for a family member and a client or a coworker, ts < 1.38, ps > .17. Participants

did, however, discount less for a client than they did for a co-worker, $t(338) = 2.02$, $p = .04$.

Study 3

Having shown, in Studies 1 and 2, that individuals show different discounting functions as a function of who will benefit (or suffer) from that decision, we next examined whether risk-taking behavior would differ depending on whom the outcome was directed at. Namely, Study 3 employed a within-subjects design in which participants were assigned to make decisions about the risk they would take on for themselves, a family member, and a co-worker.

Method

Participants were 823 Mechanical Turk workers ($M_{age} = 32.02$, $SD = 9.92$ years; 318 women) who completed the survey in exchange for $.30. One hundred and thirty-one participants (15.9% of the sample) failed the Instructional Manipulation Check and were excluded from further analyses leaving a final sample of 692 participants.

All participants first completed an online consent form. In the three between-subjects conditions, participants were asked to describe the amount of risk they would feel comfortable taking when investing on behalf of a target person: self, family member, or co-worker. Specifically, participants were asked the following question, modeled closely on a question used in the U.S. Survey of Consumer Finances[2]: "When investing on behalf of yourself/a family member/a co-worker, which of the following would come closest to describing the amount of financial risk that you would be willing to take?" Participants were then given four options: "1. Take substantial financial risks expecting to earn substantial returns, 2. Take above average financial risks expecting to earn above average returns, 3. Take average financial risks expecting to earn average returns, 4. Not willing to take any financial risks." After this question,

[2] The original question used in the U.S. Survey of Consumer Finances asked only about self preferences. We modified the question to allow for decisions made on behalf of others. The response options are identical to those used in the U.S. Survey of Consumer Finances.

participants were asked the following question, also modeled closely on a question used in the U.S. Survey of Consumer Finances: “When investing on behalf of yourself/a family member/a co-worker, which of the following would you try to achieve?”, and were given four options: “1. Very high returns, even at the risk of a high probability of losing part of the principal, 2. A good return, but with an OK degree of safety on the principal, 3. An OK return, with a good degree of safety on the principal, and 4. Low returns, but no chance of losing the principal.”

Participants in the within-subjects condition, answered the above two ‘risk’ and ‘achieve’ questions but did so on behalf of themselves, a family member, and a co-worker, in that order, answering a total of 6 questions.

Finally, participants answered demographic questions and completed the IMC.

Results & Discussion

To determine whether the target of a financial outcome influences the amount of risk that a person is willing to take, we conducted two main analyses. First, we compared risk-taking scores between the three between-subjects conditions. Second, we compared risk-taking scores among participants in the within-subjects condition. In both cases, to aid interpretation, we reverse-coded the risk composites such that higher scores were associated with more willingness to take financial risk.

Among the participants in the between-subjects conditions, the ‘risk’ and ‘achieve’ questions were highly correlated ($r = .61$, $p < .001$), and the same held true for participants in the within-subjects condition (self items: $r = .71$, $p < .001$; family member items: $r = .73$, $p < .001$; co-worker items: $r = .83$, $p < .001$). Accordingly, we created composite variables the represented the average of the ‘risk’ and ‘achieve’ questions.

A one-way ANOVA on the between-subjects conditions revealed a significant difference

in risk-taking scores across the three conditions, $F(2, 520) = 7.75$, $p < .001$. Post-hoc tests indicated that participants making a choice on behalf of themselves ($n = 172$) were significantly more willing to take risk ($M = 2.41$, $SD = .73$) than participants in both the family member condition ($n = 176$; $M = 2.19$, $SD = .66$) and the co-worker condition ($n = 175$; $M = 2.15$, $SD = .64$), $p = .005$ and $p = .001$, respectively. The family member and co-worker conditions did not significantly differ from one another, $p = .87$.

To see whether this pattern held for the participants in the within-subjects condition, we conducted a repeated-measures ANOVA with one within-subjects factor (Target: self, family member, co-worker). Results indicated that there was a significant difference in risk-taking among the targets, $F(2, 167) = 27.07$, $p < .001$. Follow-up paired-samples *t*-tests showed that participants were more willing to take risk for themselves ($M = 2.29$, $SD = .72$) than they were for a family member ($M = 1.94$, $SD = .70$), $t(168) = 7.06$, $p < .001$, or a co-worker ($M = 1.84$, $SD = .78$), $t(168) = 6.33$, $p < .001$. Further, participants were significantly more willing to take risk for family members than for co-workers, $t(168) = 2.00$, $p = .047$.

Results from Study 3 thus provide initial support for the hypothesis that individuals behave in ways that are more emotional when choosing on behalf of themselves compared to when choosing on behalf of others. The between-subjects results indicated that there was a sharp divide for self-choices and other-choices, with the family member and co-worker choices showing no difference between one another. The within-subjects results, however, did in fact show a linear decrease in risk-taking with emotional distance, such that participants were more risk-taking for the close family member than they were for the co-worker.

Study 4

Studies 1-3 provide initial evidence that decisions made on behalf of others are more

likely to conform to rational actor models of economic behavior than decisions made on behalf of the self. Our proposed explanation for this finding was rooted in Construal Level Theory: with increasing social distance, individuals are able to take a more abstract perspective on financial decisions and subsequently act in ways that are less prone to the influence of emotions (which, in this particular context, translates into being more patient and less willing to take risk). And, although the social targets that we employed in each study were meant to vary along social distance lines (e.g., a co-worker was meant to be more socially distant from the self than a family member), it is possible that social distance for these targets varied idiosyncratically across research participants. Furthermore, in Studies 1-3, we did not examine the factors that may help explain why exactly social distance would result in financial decision-making that is less subject to the influence of emotion.

Study 4 was conducted to address both of these issues. To do so, we asked participants to make financial decisions on behalf of others who were explicitly meant to vary in social distance from the self, using a numeric scale to represent distance from self, ranging from someone who would be considered as socially close as possible to someone who was a stranger. In this way, we aimed to avoid some of the idiosyncratic differences between targets that may have arisen in the earlier studies. Furthermore, participants rated each target along a number of dimensions that we expected would differ as a function of social distance: how close they felt to the target, how responsible they felt for the target, how much they like the target, how knowledgeable they were of the target's tastes, and how responsible the target is. In line with the findings from the previous studies, we had hypothesized that with increasing social distance, participants would make decisions that were less emotional.

Method

Participants were 685 Mechanical Turk workers[3] who completed the survey in exchange for $.30. One hundred and twenty-five participants (18.2% of the sample) failed an Instructional Manipulation Check and were excluded from further analyses leaving a final sample of 560 participants.

All participants completed a consent form and were told that they would be making decisions on behalf of themselves and others. Then were then given the following instructions: "When you are considering these other people, imagine people in your life on a scale from 0 to 10. You are at a 0, and someone who is a 1 is the closest a person could be to you (emotionally). Someone who is a 10 is someone you don't even know – a complete stranger to you." On the next page of the online survey, participants were asked to rephrase the instructions in order to demonstrate that they understood the task. In randomized order, within-subjects, participants then answered the risk questions from Study 3 on behalf of themselves, someone who was a 1 on the emotional closeness scale, someone who was a 5 on the emotional closeness scale, and someone who was a 9 on the emotional closeness scale. After making these choices, for the three targets other than the self, participants indicated how close they felt toward the target, how much they like the target, how knowledgeable they are of the target's tastes, how responsible the target is, and how responsible they felt for the target, all on 6-point scales that ranged from "Not at all" to "Very." For parallelism, we asked similar questions about the self, but instead of emotional closeness, we asked "how much do you feel like a stranger to yourself?".

Results & Discussion

As in Study 3, the 'risk' and 'achieve' questions were highly correlated for each target (*r*s

[3] Due to a technical error, age and sex were not collected for this sample.

> .76, *p*s < .001), so we created a composite risk preference variable for each target. Again, to aid interpretation, we reverse-coded the risk composites such that higher scores were associated with more risk-taking financial behavior.

As in Study 3, we conducted a repeated-measures ANOVA with one within-subjects factor (Target: self, person 1, person 5, person 9). Results indicated that there was a significant difference in risk-taking among the targets, $F(3, 557) = 51.77$, $p < .001$. Follow-up paired-samples *t*-tests showed that participants were more willing to take risk for themselves ($M = 2.58$, $SD = .79$) than they were for a person at level 1 of emotional closeness ($M = 2.32$, $SD = .84$; $t(559) = 7.52$, $p < .001$), a person at level 5 of emotional closeness ($M = 2.14$, $SD = .72$), $t(559) = 10.99$, $p < .001$, or for a person at level 9 of emotional closeness ($M = 2.03$, $SD = .94$; $t(559) = 10.59$, $p < .001$. All other comparisons were significant as well (see Table 1 for all pairwise tests for risk-taking from Study 4).

Mediation Analyses. Study 4 also allowed us to examine whether differences on possible dimensions that may vary as a function of social distance can account for the differences that we saw in risk-taking. Namely, we were able to ask whether emotional closeness, knowledge of tastes, perceived responsibility, sense of responsibility for the target, and general liking of the target could possibly account for the differences in risk-taking that arose between targets. These five measures corresponded well to one another (Self: $\alpha = .83$; Person 1: $\alpha = .91$; Person 5: $\alpha = .67$; Person 9: $\alpha = .82$), and as a result, we report mediation analyses using a composite measure of these five items (see Table 2 for means of each item, for each target). As a preliminary analysis, a repeated-measures ANOVA with one within-subjects factor (Target: self, person 1, person 5, person 9) revealed that there was a significant difference across this distance composite measure among the targets, $F(3,557) = 832.79$, $p < .001$, indicating that social

distance did in fact vary with each target. To assess mediation, we drew on the path analytic approach to within-participant mediation described by Montoya and Hayes (2015). While Montoya and Hayes (forthcoming) explore within-participant mediation analyses for process variables with two levels, our study revolved around a mediator with four levels and thus necessitated that we conduct a modified version of their approach, using four contrast coefficients rather than two.

INSERT TABLE 2 HERE

We proceeded in two ways. First, we conducted a within-participant mediation with linear contrast weights. In essence, this analysis asks whether a decrease in risk taking is due to an increase in the mediator (i.e., social distance) when the target increases by one level (i.e., self to person 1, person 1 to person 5, and person 5 to person 9), assuming that the differences in social distance between targets are equal. A bootstrapping analysis with 10,000 resamples provided evidence that social distance mediates the relationship between target person and risk-taking. The indirect effect of moving one level (i.e., self to person 1) was .0100 with a 95% confidence interval of 0.0358 to 0.1636.

Second, we conducted a within-participant mediation with "distance" contrast weights to assess whether a decrease in risk-taking is due to an increase in social distance, taking into account the numeric scale associated with the social distance scale that we had asked participants to use (i.e., one unit of social distance between the self and person 1, four units between person 1 and person 5, and four units between person 5 and person 9). Again, a bootstrapping analysis with 10,000 resamples provided evidence for mediation: the indirect effect of moving one unit

(i.e, self to person 1, or one quarter of the distance between person 1 and person 5) was 0.0377 with a 95% confidence interval of 0.0166 to 0.0565.

General Discussion

People are notoriously focused on the present, and as a result, tend to act in a variety of ways that favor the short term over the long term. This general phenomenon has been thoroughly investigated in dozens of papers over the last several decades. In the current research, we examined whether two well-documented potentially negative financial behaviors – excessive discounting of future rewards and excessive risk-taking – are lessened when individuals make choices on behalf of others rather than themselves. Using Construal Level Theory (Liberman et al., 2007) to motivate our work, we hypothesized that research participants would act in ways that were considered less emotional (and perhaps closer to models of the rational economic actor), if they were choosing for more socially distant others. In line with this hypothesis, we found – in five studies – that when emotional distance increased, the tendency to act in more emotionally driven ways decreased.

Using both hypothetical and incentive-compatible tasks, we found that when choosing on behalf of others compared to choosing on behalf of themselves, research participants were less willing to excessively discount future rewards and were less willing to take financial risk. Along the way, we used between- as well as within-subjects designs to ensure that participants weren't simply varying their responses as a result of demand characteristics (in the within-subjects conditions). Additionally – and for similar reasons – in Study 2b, we randomized the order of decision targets for whom participants were making choices.

In each study, we found robust evidence that participants acted more in line with the rational economic actor – that is, less temporal discounting and less risk-taking – when choosing

on behalf of other people compared to when choosing on behalf of the self. Notably, we found inconsistent evidence for different behavior between the various other targets in the first three studies. For example, in Study 2, no differences in temporal discounting were found between family member and co-worker: in Study 2a, participants discounted future rewards more steeply when choosing on behalf of a family member compared to a client, but this pattern was not replicated in Study 2b (when choices were made in a randomized order). In Study 3, the within-subjects portion of the study showed that participants took more risk for the chosen close family member than for the chosen co-worker. Between-subjects results in the same study, however, did not show this pattern. It is possible, then, that there is a sharp drop-off in emotionality when making choices on behalf of the self compared to making choices on behalf of other people – no matter who those other people are. Additionally, there may not be a concomitant emotional drop-off as decision makers progress from one target to another (i.e., family member to co-worker). Alternatively, it may be the case that the level of emotionality conveyed in financial choices does in fact differ between specific others (e.g., between a family member and a client), but that the level of emotional distance between the other targets in studies 1-3 was not sufficiently different to detect such effects consistently.

Another possible explanation for the differences that arose between choosing for a family member versus choosing for a co-worker rests in the sense of accountability that individuals feel when making these decisions. That is, just guessing what someone else would want might be qualitatively different from making a choice for someone else and having them learn about what was chosen for them. In Study 2a, for example, participants discounted less for family members than for co-workers, perhaps because one might want the best thing for a family member – especially if the choice is real and they will find out about it – but not feel as accountable for a

co-worker. The role of accountability in social decision-making might also shed light on why the results from Study 3 could potentially be seen as being in conflict with a study that found people tend to focus on safe bets for the short-term, but with greater temporal distance, ignored risks and instead focused on how large of a payoff they might be able to receive (Sagristano, Trope, and Liberman, 2002).

As a result of these issues, we conducted Study 4, in which we directly manipulated the emotional connection that participants felt toward the targets (by instructing them to consider targets that varied in closeness to them). Results from that study indicated that there was in fact a decrease in risk-taking that was commensurate with the decrease in social distance. Study 4 also allowed us to examine why some of the differences in risk-taking (and temporal discounting) may have arisen. We considered several factors which may vary with social distance, specifically emotional closeness, general liking of the target, knowledge of tastes, sense of responsibility for the target, and perceived responsibility of the target. Using a composite measure of these five items, we found social distance varied with each target. We performed mediation analysis two ways, first assuming a linear structure with equal social distance between the targets and, second, utilizing the social distance implied by the numeric scale we asked participants to use in deciding upon specific decision targets. In both cases, we found significant evidence that social distance mediates the relationship between decision target and risk-taking.

From a managerial perspective, the results from this collection of five studies are relevant to the asset management industry and the marketing of their services. Namely, our findings suggest that asset managers might be more conservative with respect to risk-taking and more patient in managing others' funds than they would be managing their own assets. We leave it to future work, though, to examine this possibility in a sample of investment professionals.

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Table 1.

Descriptive statistics and comparisons for all studies.

Variable of interest	Study	Target 1 (self)	Target 2	Target 3	Target 4
Discounting: larger, later rewards	1	3.93[a] (3.35)	4.84[b] (3.68)	5.08[b] (3.74)	--
	2A	4.01[a] (3.52)	5.85[b] (3.51)	5.36[c] (3.60)	6.14[b,d] (3.36)
	2B	4.86[a] (3.53)	5.37[b,c] (3.42)	5.19[b] (3.51)	5.52[c] (3.44)
Discounting: *k*	1	.018[a] (.012)	.016[b] (.013)	.016[b] (.013)	
	2A	.016[a] (.012)	.012[b,d] (.011)	.014[c] (.012)	.011[d] (.011)
	2B	.015[a] (.012)	.014[b] (.011)	.014[a,b,c] (.012)	.013[b,c] (.011)
Risk taking	3 (between subjects)	2.41[a] (.73)	2.19[b] (.66)	2.15[b] (.64)	--
	3 (within subjects)	2.29[a] (.72)	1.94[b] (.70)	1.84[c] (.78)	--
	4	2.58[a] (.79)	2.32[b] (.84)	2.14[c] (.72)	2.03[d] (.94)

Note: In Studies 1, 2, and 3, Target 1 = Self, Target 2 = Family Member, Target 3 = Co-worker and Target 4 = Client. In Study 4, Target 1 = Self, Target 2 = Person 1, Target 3 = Person 5, and Target 4 = Person 9. Within row, items not sharing a superscript letter are significantly different with at least $p < .05$. In each cell, the first entry is the mean score and the second entry, in parentheses, is the standard deviation. The scores are calculated as follows. For discounting, the number of larger, later rewards is the sum of the number of times a participant chooses the larger, later amount in the Kirby and Maraković (1996) temporal discounting task, and *k* is the estimated hyperbolic discount rate. For risk taking, the score is a composite of the two risk aversion measures (reverse-coded) used by the U.S. Survey of Consumer Finances; higher numbers are associated with more risk taking.

Table 2.

Composite measure of factors that may vary as a function of social distance – Study 4.

	Self	Person 1	Person 5	Person 9
Closeness	5.29[a]	5.44[b]	3.44[c]	1.85[d]
	(1.15)	(1.17)	(0.94)	(1.30)
Liking	4.80[a]	5.54[b]	4.25[c]	3.19[d]
	(1.23)	(1.01)	(1.09)	(1.44)
Knowledgeable of tastes	5.46[a]	5.38[a]	3.40[c]	2.12[d]
	(0.84)	(1.10)	(1.10)	(1.41)
Responsible for	5.42[a]	4.96[b]	2.52[c]	1.67[d]
	(0.92)	(1.41)	(1.28)	(1.24)
How responsible	5.16[a]	5.12[a]	4.10[c]	3.40[d]
	(1.00)	(1.20)	(1.28)	(1.55)

Note: Within row, items not sharing a superscript letter are significantly different with at least $p < .05$. In each cell, the first entry is the mean score and the second entry, in parentheses, is the standard deviation. The scores are a composite of five items: emotional closeness, general liking of the target, knowledge of tastes, sense of responsibility for the target, and perceived responsibility of the target.