It's the thought that counts over time: The interplay of intent, outcome, stewardship, and legacy motivations in intergenerational reciprocity

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1. Introduction

The phrase “It's the thought that counts” is used when someone 'unintentionally' gives you a wrong or disappointing gift, or good intentions to be helpful go awry. Even if you do not like the gift you received, or a well-intended gesture does not play out in a helpful manner, you appreciate the generosity and kindness of that person because you think that intentions matter. However, intentions are not always observable, especially when the intended action involves temporally distant consequences, such as the case with decisions that affect future generations. In intergenerational settings, the original behaviors of past generations are temporarily removed from the future outcomes to subsequent generations and thus the realized outcome to subsequent generations can become a vague signal of what was originally intended by past generations. Such decoupling of intentions and outcomes becomes significant when information about good intentions is not available and the corresponding outcomes are not desirable. In such cases, the good “thought” does not “count,” which can block a pattern of behaviors that promote sustainability and profitability over the long term.

Here, we explore how the past generation's intention with respect to the treatment of future generations and the actual outcomes experienced by that future generation may differentially affect intergenerational behaviors in the future. We also demonstrate that making the intentions of preceding generations of actors transparent in resource allocations can be critical. Specifically, people look to previous generations’ intentions to guide their own decisions for allocating resources for future generations. By making the good intentions of past generations transparent in resource allocations, it enhances concern for future generations and enacts feelings of stewardship, which in turn promotes generosity to future others. Finally, we identify an intervention – the induction of legacy motivations – that can prevent a pattern of selfish intentions from being reciprocated forward in time to future generations.

1.1. Intergenerational allocation decisions & reciprocity

Many pressing issues in our society involve the distribution of resources among more than one generation of people. Environmental issues such as ozone depletion, species extinctions, and global warming all center on the tension between today's profitability and tomorrow's sustainability. In finance, intergenerational equity is a central consideration with respect to the national debt. A large public debt may enable present generations to gain immediate benefits but typically implies higher interest payments, which can result in higher debt imposing risks and costs on future taxpayers (Huntley, 2010), especially in situations in which debt compounds over time (Krugman, 2013). Furthermore, a pervasive challenge in organizational life is that what may
be in the best interest of the present generation of organizational actors is not necessarily what is best for future generations of organizational actors. For example, a manager may need to decide whether to execute a new strategic plan, which would constrain the company’s financial and human resources options in the future, but could considerably enhance the effectiveness of the organization’s current activities (Tost, Hernandez, & Wade-Benzoni, 2008). Or, consider the case of a financial analyst finishing up a position at her company to pursue an MBA degree, who must decide whether to take time out of her own schedule to meet with and guide the new analyst taking her place. If she takes the time to mentor the new analyst, she will have less time to prepare for her transition into the MBA life, but doing so would help the new analyst be better prepared for her new role in the firm (Hernandez, Noval, & Wade-Benzoni, 2015). In both scenarios, the actors must make their decision based on the tradeoff between what is important or beneficial to them now, and what is beneficial for future generations.

Organizations often face conflicts between organizational actors representing different generations (Joshi, Dencker, Franz, & Martocchio, 2010). In particular, situations involving tradeoffs between the interests of present and future generations, such as those described above, have been termed “intergenerational dilemmas” (Wade-Benzoni & Tost, 2009). Research on intergenerational dilemmas has focused on identifying psychological features of intergenerational decisions, barriers to advancing intergenerational beneficence, and variables that lead the present generation to act generously on behalf of future others (see Wade-Benzoni & Tost, 2009 for a review). A defining feature of intergenerational decisions is that they involve the sequential use of resources with time delays between each party or cohort’s access to the resource (Joshi et al., 2010; Wade-Benzoni & Tost, 2009). Because of the chronological aspect of intergenerational relations, actors in the previous generation are removed from some of the consequences of their own decisions, while actors in subsequent generations may inherit good or bad circumstances even though they had little or no voice in creating those circumstances. Further, generations that come later in the intergenerational sequence often do not have the opportunity to directly reciprocate the behavior or deeds of previous generations since the people who constituted former generations may no longer be a part of the social exchange context due to, for example, their exit from the organization or mortality more generally.

A central barrier to acting on the behalf of future generations is the tendency to discount the value of resources to be consumed by future others (Wade-Benzoni, 2008). Individuals typically prefer smaller-sooner rewards over larger-later rewards and are less likely to choose an option that benefits others rather than themselves. However, philosophers and theorists have pointed to the lack of direct reciprocity between generations as the most central consideration that prevents people from sacrificing their own gain for the good of future generations (Care, 1982). When one generation does not benefit from the sacrifices it makes for future generations, then why should it act on the behalf of future others? Seminal work on intergenerational conflict in organizations has offered a response to this question by introducing the notion of intergenerational reciprocity (Wade-Benzoni, 2002).

In situations in which people cannot reciprocate the good or evil left to them by previous generations, they can instead reciprocate by behaving similarly toward the next generation. In other words, people can pass on benefits (or burdens) to future generations as a matter of retrospective obligation (or retaliation) for the good (or bad) received from past generations. In a series of studies, Wade-Benzoni (2002) found that individuals’ perceptions of what the previous generation left for them affected what they would leave for the next generation. Specifically, the more the previous generation apparently acted on behalf of the present generation, the more the present generation acted on the behalf of future generations. The effect of intergenerational reciprocity was robust across different contexts and participant populations, thus establishing it as a key consideration in understanding intergenerational behavior and revealing a powerful tool to activate intergenerational beneficence. While this research provided foundational evidence that advanced our understanding of the psychology of intergenerational behavior, central questions regarding the phenomenon of intergenerational reciprocity remain unanswered. Specifically, the research by Wade-Benzoni (2002) largely conflated the intention of prior generations with the actual outcomes inherited by subsequent generations. That is, participants in these studies were only informed of the amount left for them from the previous generation, but it was ambiguous whether that amount was what the previous generation had intended to leave for future generations. Thus, these studies did not capture the possibility that what was intended by previous generations was not necessarily what the subsequent generations received. The temporal discontinuity between the previous generation’s intention and the actual outcome experienced by later generations means that this potential decoupling of intentions and outcomes is an important consideration in intergenerational resource allocation.

1.2. The role of intentions in intergenerational decision making

In prior research on the significance of decoupled intentions and outcomes, scholars have found that people tend to neglect information about intentions when outcomes are presented (Cushman, 2008; Cushman, Dreber, Wang, & Costa, 2009; Pizarro, Uhlmann, & Bloom, 2003; Sezer, Zhang, Gino, & Bazerman, 2016; Weiner, 1995). A classic example of this outcome bias is illustrated in a study by Baron and Hershey (1988) in which participants rated the quality of a surgeon’s decision to perform a risky operation. Participants rated the decision as lower quality when the patient died as compared to when the patient survived – even though the decision processes were identical in each case. These findings, however, do not consider organizational evaluations and decisions that involve an interplay of reciprocity dynamics and intertemporal considerations, such as the case in intergenerational contexts.

Considerable research on reciprocity and fairness perceptions has highlighted the importance of intention (e.g., Blau, 1964; Gouldner, 1960; Kahneman, Kretsch, & Thaler, 1986). Perceived intention is related to perceptions of process fairness. People are concerned about whether a causal agent knowingly or unknowingly contributed to outcomes received (Baron, 1993; Lind & Tyler, 1988). For example, people tend to reciprocate more positively in response to deliberate help than accidental help (Greenberg & Frisch, 1972) and respond differently to the offers made by humans versus non-humans in ultimatum games even though the offer is the same, suggesting that people use actor’s intentionality to guide their responses (Blount, 1995). Corroborating this view, research in experimental economics indicates that intentions matter more than material payoffs, supporting this kindness-based reciprocity model (e.g., Charness & Levine, 2007; Rubin, 1993). For instance, in an experimental labor market, employees tend to reward their firm’s good intention (i.e., a high wage assignment) even when poor business conditions decrease their actual earnings (Charness & Levine, 2007). Taken together, evidence across several academic fields converges on the fact that people care about actors’ intentions and use them to guide their own behaviors under certain circumstances.

In the absence of direct reciprocation opportunities, the generous behavior of prior generations can serve as the source of intergenerational norms and prompt feelings of responsibility to act in the same way (Wade-Benzoni, 2002). Research shows that a group’s past is powerful in establishing norms and values (Tajfel & Turner, 1986), and an increase in awareness of that past can make norms of behavior more salient and distinctive (Jettens & Wohl, 2012). Here, we expect that the transparency of what a preceding generation intended to do for others is critical in shaping intergenerational norms that help people to overcome barriers associated with intergenerational beneficence.

Thus, we propose the following hypotheses.

**Hypothesis 1.** When both the intention of the previous generation and the actual outcome are known, people will model their
intergenerational allocation decisions based on the intention, rather than the outcome, of the previous generation, such that:

**H1a.** The more generous the intended action was by the previous generation, the more generous people's allocation decisions will be with regards to future generations, and.

**H1b.** The more selfish the intended action was by the previous generation, the more selfish people's allocation decisions will be with regards to future generations.

1.3. The mediating role of stewardship

We further propose that the previous generation's good intention leads to more generous behavior in the present generation because it activates a feeling of stewardship. Stewardship is “the extent to which an individual willingly subjugates his or her personal interests to act in the protection of others’ long-term welfare” (Hernandez, 2012, p. 8) (see also Davis, Schoorman, & Donaldson, 1997). When feelings of stewardship are evoked, individuals value actions that benefit the long-term welfare of others and are guided in their behavior by this “other-regarding” perspective and long-term orientation (Hernandez, 2012). The intersection of intertemporal and interpersonal dimensions is a central distinguishing feature of both stewardship and intergenerational phenomena and thus it is not surprising that stewardship has been identified as an important force in intergenerational decisions. In support of this, prior research empirically demonstrated that greater feelings of stewardship were related to greater allocations of resources to future generations (Wade-Benzoni, Hernandez, Medvec, & Messick, 2008).

Stewardship decisions can be promoted by establishing interpersonal trust and identification through social exchanges across generations (Davis et al., 1997; Hernandez, 2012). Thus, how previous agents have treated present decision makers is important in evoking feelings of stewardship; past stewardship behaviors of others will positively influence individuals’ sense of retrospective obligation, and that eventually this process can generate a norm of beneficent intergenerational reciprocity (Hernandez, 2012). People mirror the generous past into the future and feel greater responsibility to look after future others. That is, the generosity of past generations can be causal in the sense of promoting feelings of stewardship toward future generations. As a result, the ongoing dynamics of intergenerational reciprocity in organizations can be enhanced by the formation and continuity of stewardship in organizations. In this paper, we empirically examine this relationship between stewardship and intergenerational reciprocity that was highlighted theoretically by Hernandez (2012). We propose that beliefs about the intentions of prior generations are critical in the emergence of feelings of stewardship and the subsequent establishment of the norm of intergenerational reciprocity.

**Hypothesis 2.** The relationship between past generation's intention and present generation's behavior toward the future generation is mediated by the increased feelings of stewardship for future generations experienced by the decision makers from the present generation.

1.4. Legacy motivation as a remedy for selfish past intentions

If our hypothesis is correct, we will see that when the previous generation acted benevolently toward the present generation, it activates a sense of stewardship, which in turn leads to more benevolence toward future generations. But what happens when the previous generation acted selfishly? Intergenerational reciprocity can be a double-edged sword depending on the behavior of prior generations: self-interested intentions from the past can deter intergenerational beneficence moving forward. Not only does exposure to selfish intentions of prior generations provide social sanctions for acting in a self-serving manner, it also eliminates a sense of indebtedness and obligation to maintain a ‘pay it forward’ chain, which is a central motivation for more generalized reciprocity (Gouldner, 1960). Consequently, whether subsequent outcomes are favorable or not, the selfish intent of prior generations could invite negative “forward” reciprocation, such as more selfish behavior toward future generations. It is therefore important to provide an alternative pathway that inoculates decision makers from the negative reactions from previous generations' selfish behaviors and reestablishes a generous intergenerational norm even when the past suggests a non-generous norm. Here, we consider another important motivational source for intergenerational beneficence that can serve this corrective function: The desire to leave a positive legacy.

Legacy has been broadly described as what one leaves behind, whether this is material-based or value-based (Hunter & Rowles, 2005). More specifically in the context of intergenerational decisions, legacy is defined as an enduring meaning attached to one's identity and manifested in the impact that one has on others beyond the temporal constraints of the lifespan (Fox, Tost, & Wade-Benzoni, 2010). Research on intergenerational decisions has identified legacy motivation as a key factor in promoting intergenerational generosity (Wade-Benzoni, Sondak, & Galinsky, 2010; Wade-Benzoni, Tost, Hernandez, & Larrick, 2012). People strive to find meaning for their lives and central to this meaning is that the effects of one's existence persist into the future (Becker, 1973; Kotre, 1984). Leaving a positive legacy for future generations represents a way in which people can achieve unity with an enduring future that extends beyond themselves (Kotre, 1984). It is an important motivator of intergenerational beneficence because it enables people to experience a meaningful connection with a social entity that will presumably outlive themselves.

The activation of legacy motivations makes the ethical considerations of intergenerational decisions more salient and this is especially the case when intergenerational decisions can lead to a negative legacy (Wade-Benzoni et al., 2010). Because people are often motivated to reflect positive self-promotion through service to future others (Newton, Herr, Pollack, & McAdams, 2014), thinking about leaving a negative legacy can be emotionally aversive and seen as ethically problematic. When the preceding generation apparently had selfish intentions, decision makers' thoughts about their own lasting influence through legacy motivation induction may inoculate them against negative forward reciprocation, thus offsetting the effects of past wrongs. Therefore, we hypothesize that inducing legacy motivations would forestall negative repercussions of selfish intentions of prior generations. In contrast, if the norm of intergenerational beneficence has already been established by predecessors through their generous intentions, legacy induction would not exert an additional positive effect on intergenerational decisions.

Legacy and stewardship, although distinct constructs, play an interconnected role in the intergenerational story. Specifically, thinking about one's legacy inspires stewardship. Thoughts of one's legacy bring to the forefront one's long-term impact on others, which is central to promoting stewardship. One way of highlighting this proposed mechanism is by testing for a moderated relationship. We expect that when legacy motives are enacted, feelings of stewardship are enhanced, which promotes intergenerational beneficence. This effect will be observed when stewardship has not been sufficiently secured in the absence of past good intentions. But in the presence of past good intentions, when stewardship has already been sufficiently enacted, then legacy motives will not have a further effect on stewardship.

**Hypothesis 3.** When the intention of the previous generation is perceived to be selfish by the present generation, activating legacy motivations will reduce the likelihood that people will model the selfish behavior in their own intergenerational decisions.

1.5. Research overview

In this paper, we hypothesize that people will give greater weight to
a preceding generation’s intention, rather than the outcomes inherited, when making their own allocation decisions for future generations. In particular, the generous intention of past generations will encourage present agents to engage in intergenerational beneficence even if the behavior of prior generations yielded unfavorable outcomes for them (H1). In light of prior research on the role of stewardship in intergenerational decisions, we also hypothesize that awareness of past generous intentions leads people to express greater feelings of responsibility and concern for future generations (i.e., stewardship), which contributes to generous intergenerational behavior (H2). Finally, we predict that activating legacy motivations will help decision makers to overcome the negative reciprocity effects of the selfish intentions of the previous generations (H3). We tested our hypotheses in five experiments. In Experiments 1A–B, we explored H1 using a lab study involving allocations of real money and natural resource. Experiment 2 replicates the findings in the context of natural resource allocation. In Experiments 3 and 4, we used simulation studies involving organizational resource allocation decisions to explore the role of stewardship (H2) and legacy motivations (H3) in the relationships among intentions, outcomes, and intergenerational reciprocity. In these studies, we report all measures, manipulations and exclusions.

2. Experiment 1A (pilot): Money allocation task with different outcomes

In this study, we utilized an experimental paradigm described by Wade-Benzioni et al. (2008), which was developed to facilitate the empirical study of intergenerational decisions in laboratory settings. The long time horizons implicated in most intergenerational contexts present a methodological challenge when investigating the psychology of intergenerational decisions in a laboratory. The experimental approach developed by Wade-Benzioni et al. (2008); Wade-Benzioni et al. (2010) simulates features that emanate from the key characteristics of intergenerational contexts without the need for an actual long time delay between decisions and consequences. These features include, for example, power asymmetry (i.e., present generation has complete unilateral decision-making power and future generations have no voice) and absence of direct reciprocity between generations (i.e., there is no opportunity for future generations to directly reciprocate the good or bad given to them by prior generations). The simultaneous presence of such key features creates an intergenerational psychology (see Wade-Benzioni et al., 2008, for a more detailed discussion of the experimental paradigm), while enabling us to hold the intertemporal factor constant so that we may focus our investigation on other variables. The procedure follows a methodological tradition used by other classic experiments in organizational behavior (e.g., Weick & Gilfillan, 1971; Zucker, 1977) involving the systematic replacement of individuals in a laboratory context to produce an analogue of generational succession.

Participants took part in an experimental study where they were asked to divide a pool of money between themselves and a participant who would participate in the same study after them. We experimentally manipulated the previous participant’s intention, which subsequently led to different amounts of money left. We predicted that the amount of money participants left to their next participants would be influenced by the previous participants’ decision (generous vs. selfish), regardless of the actual amount of money they received.

2.1. Participants

Sample size was determined before any data analysis. Since Experiment 1A was a pilot study, we recruited approximately 20 participants per group (Hertzog, 2008). We recruited 84 students and staffs who responded to announcements about the experiment that took place at Duke University. Three participants who were suspicious of the purpose of the experiment were excluded from the study. One participant did not understand the allocation rules and was also excluded. In the end, results from 80 participants were included in the analysis for this study (56% female; Mean age = 25.41 years, SD = 10.13, 18–64 years). Participants were paid $10 for their participation.

2.2. Materials and procedure

Participants were invited into the lab to take part in a decision making study, in which their task was to decide how much money they wanted to give to an anonymous participant who would be engaging in the same decision making task after them and how much to keep for themselves. We further explained that a participant who came before them also made the same decision and left money, anywhere between one to five dollars. In fact, there was no previous participant nor a participant afterwards. This cover story was used to manipulate the intention of the previous decision maker, and to make the money allocation task seem consequential to others. After the task was finished, participants were asked to complete a follow-up questionnaire. Finally, they were debriefed, paid, and dismissed.

2.2.1. Intention manipulation

Participants were randomly assigned to one of the two intention conditions – Generous and Selfish intention. In the generous intention condition, participants were told that the previous participant had left them with $5, the maximum amount of money that anyone can leave behind for the next person. In the selfish intention condition, participants were told that the previous participant had left them with $1, the minimum amount of money that anyone can leave behind.

2.2.2. Outcome manipulation

Participants were subsequently informed that the actual amount of money they would receive from the previous participant depends on the result of a lottery draw using a ball spinner. If an even number was drawn, their money would double; if odd numbers, they would end up getting no money at all. We told participants that there were the same amounts of odd and even numbered balls in the lottery ball spinner, and they had an equal chance of doubling their money or losing all the money that was left behind for them. Participants were randomly assigned to one of the two outcome conditions – Good or Bad outcome. In the good outcome condition, participants had their money doubled, whereas, in the bad outcome condition, participants ended up getting no money at all. Thus, participants received either $10 (Generous intention-Good outcome), $2 (Selfish-Good), or nothing (Generous-Bad or Selfish-Bad).

2.2.3. Allocation decision

Participants were given an envelope that was stuffed with five one-dollar bills and were asked to decide what proportion of the five dollars they would like to leave behind for the next participant in the game and how much to keep for themselves. At this point, the experimenter left the room so that participants could make their allocation decisions privately. The amount of money left behind for the next participant served as our main dependent variable.

2.2.4. Results

We conducted a two-way ANOVA with the intention (Generous vs. Selfish) and outcome (Good vs. Bad) variables on the allocation amount and found that there was significant main effect of intention, $F(1,76) = 38.65, p < .001, \eta^2_p = .34$. Participants in the generous intention condition were more likely to leave money for future participants ($M_{\text{generous}} = 3.16, SD = 1.53$) than those in the selfish intention condition ($M_{\text{selfish}} = 1.48, SD = .89$). Neither outcome main effect ($p = .07$) nor the intention-outcome interaction ($p = .10$) was statistically significant. Thus, the amount was higher in the generous intention condition than the selfish intention condition, regardless of whether the outcome was good ($M_{\text{generous-good}} = 3.63, SD = 1.50$ vs. $M_{\text{selfish-good}} = 1.50, SD = .80$; $F(1,76) = 31.72, p < .001, \eta^2_p = .29$) or bad
Inheritance of agents’ intentions on intergenerational allocations. Participants were more generous to future participants when informed that previous participants had generous intentions as opposed to those informed that previous participants had selfish intentions. The effect of intention was not contingent on the actual amount of money participants had. Thus, in the context of intergenerational allocations, people tend to rely on previous participants’ intention, regardless of the outcome inherited.

One caveat is that participants’ decisions may be a response to the differences in the amounts they had: People who had more money may have left more money because they had more to leave to future participants, not necessarily because they responded to the previous participant’s decision. For example, participants in the generous intent and good outcome condition may have been particularly generous because of the total amount of money they received. They might have been feeling particularly generous not because of experimental manipulations but because they simply had received more money than participants in the other conditions. In our next study, we will examine the effect of intention by creating a context in which the outcome is objectively identical.

3. Experiment 1B: Money allocation task with identical outcomes

In Experiment 1B, we used a similar experimental design, except that we held the outcome constant such that good and bad outcomes were objectively identical. In this study, participants were told that the amount of money they were given was jointly determined by how much money a previous participant had left for them (i.e., intention) and a random number generator. Given that the random number generator affects the actual outcome in unpredictable ways, we could tease apart the effect of intention and actual outcome. We examined the extent to which the previous participants’ intention and the actual outcome inherited affected participants’ allocation decision. We predicted that participants would be more likely to base their allocation decision on previous participants’ intention and less so on the actual outcome.

3.1. Participants

Sample size was determined before any data analysis. Since we initially expected an effect size of Cohen’s $f^2 = .25$ with the desired power level of .90 for the main effect of intention, we chose a sample size per group of between approximately 35 and 40. We recruited 151 undergraduate students at Duke university who had not participated in the previous study (Mean age = 21 years, SD = 5.74 years; 60% female). Participants took part in the study in exchange for $8. One participant was excluded due to incomplete responses, and all analyses reported here are based on the remaining 150 participants.

3.2. Materials and procedure

Same as Experiment 1A, participants’ task was to decide how much money they wanted to give to an anonymous participant who would be engaging in the same decision making task after them and how much to keep for themselves. We, however, controlled for the amounts of money participants were given constant (i.e., $6). Participants were told that the six dollars they were given was partially determined by a participant who came before them.

3.2.1. Intention manipulation

Participants were randomly assigned to either the generous or the selfish intent condition. Participants were told that a participant who took part in the same study before them was also given some amount of money and had to decide how much to keep for themselves and how much to leave behind for the next participant. In the generous intention condition, participants were told that the previous participant had decided to keep about 33% of the money for themselves, thus leaving a relatively large amount of money behind for the next participant. In the selfish intention condition, participants were told that the previous participant decided to keep 80% of the money for themselves, thus leaving a relatively small amount of money behind for the next person.

3.2.2. Outcome manipulation

Next, participants were told the following: the amount of money that was given to them by the previous participant was changed by anywhere between $-100$% and $+200$% such that they would receive somewhere between $0$ and $200$% more than the amount of money that was left behind for them by the previous participant. The exact percentage change was determined by a random number generator at the lab. In the good outcome condition, participants were told that the amount of money given to them by the previous participant was increased by 50%. In the bad outcome condition, participants were told that the amount of money given to them by the previous participant was decreased by 50%.

3.2.3. Allocation decision

Participants were given an envelope with six one-dollar bills and were asked to decide what proportion of the six dollars they would like to leave behind for the next participant in the game and how much to keep for themselves.

3.2.4. Intention manipulation check

To assess whether our intention manipulation was effective, we used a three item measure ($α = .89$) of the perceptions of the intention of the preceding participant as a manipulation check. Participants indicated the extent to which they agreed with each of the following statements on a 7-point Likert-type scale, where 1 = strongly disagree and 7 = strongly agree: “The previous participant had good intentions in his/her allocation to me,” “The previous participant was generous in his/her allocation decision,” and “The behavior of the previous participant was fair”. We averaged these items to create a composite index of the intention manipulation check.

3.3. Results

3.3.1. Intention manipulation check

To examine the effectiveness of our intention manipulation, we conducted a one-way analysis of variance (ANOVA) with the intention of the previous participants (generous vs. selfish) as the between-subjects factor on the intention manipulation check rating. Participants rated the previous participant in the generous intention condition ($M_{\text{generous}} = 5.80, SD = 1.21$) to be more generous than participants in the selfish condition ($M_{\text{selfish}} = 3.06, SD = 1.30$; $F(1,148) = 179.02, p < .001, d = 2.18$), indicating that our intention manipulation was successful.

3.3.2. Money allocation

Next, we conducted a two-way ANOVA with intention and outcome as the between-subjects factors and the amount of money left for future participants as the dependent variable. As shown in Fig. 1, this analysis revealed a significant main effect of intention; participants in the generous intention condition left a larger amount of money to future participants ($M_{\text{generous}} = 2.08, SD = 1.49$) than participants in the selfish intention condition ($M_{\text{selfish}} = 1.52, SD = 1.28$; $F(1,146) = 5.94, p = .016, η_{p}^2 = .04$). Furthermore, the main effect of outcome and the interaction between intention and outcome were not statistically significant ($F(2, 292) = 3.13, p = .05$). The amount of money left for future participants was significantly higher in the generous condition, regardless of the outcome ($M_{\text{generous-bad}} = 2.15, SD = 1.46$ vs. $M_{\text{generous-good}} = 2.00$,
come. Consistent with previous study's generous intentions, and this e the future participant when informed that the previous participant had SD = 1.53; (Msel = .63) than the amount in the selfish intention condition (Mselfish-bad = 1.49, SD = 1.41 vs. Mselfish-good = 1.56, SD = 1.15; p = .83).

3.4. Discussion

In line with our hypothesis, participants were more generous toward the future participant when informed that the previous participant had generous intentions, and this effect held regardless of the actual outcome. Consistent with previous study’s findings, we did not find an intention and outcome interaction, suggesting that the impact of knowing intention was not contingent on what participants actually received. Our findings suggest that people give greater weight to a preceding decision maker’s intention rather than to their own outcome when confronted with the same allocation decision for future participants. More importantly, by creating a context in which the outcome was constant (i.e., $6), we could rule out the possibility that people simply relied on the amount of money they had.

This experiment also allowed us to consider an alternative explanation for the effect of intention on intergenerational allocations. First, given that we used an arbitrary amount of money, it was unclear whether participants’ perceptions of the outcome were indeed consistent with our manipulation. That is, although we told participants that the amount of money given to them by the previous participant was increased or decreased by 50%, this manipulation might not necessarily be perceived as good or bad on a psychological level. Thus, the outcome manipulation might not have been effective or meaningful. Second, our outcome manipulation in this study was completely orthogonal to previous participants’ decisions. In other words, the amount of money participants received was independently determined by a separate and uncontrollable event (i.e., the random number generator) that cannot be attributable to previous participants’ intentions. Without the casual link between intention and outcome, participants might have simply ignored the outcome and given greater weight to the intention of the previous participant, which was relatively more salient. In the next study, we will address these issues by increasing the validity of the outcome manipulation.

4. Experiment 2: Natural resource allocation

In Experiment 2, participants played a simulation of running a fishery and decided the amount of fish to harvest this year. Given that the species of fish were in danger due to the problem of over-exploitation, they would need to cut their harvest to enable the species to sustain its existence over time and survive in the long run for future generations; however, this would compromise immediate profitability. Participants were informed about how previous generations of fishers responded to the same problem a few decades ago before making their own decisions.

Experiment 2 was designed to replicate the effect of intention and provide evidence of a more robust outcome manipulation than that used in previous studies. To reduce the ambiguity of perceived outcome, we manipulated the type of outcome by explicitly describing their fishery condition as either good or bad. In addition, we included outcome manipulation check questions to assess participants’ perceptions of outcome and ensure the validity of the manipulation. Experiment 2 also featured the causal link between previous generations’ intention and current outcome, such that the condition of the current fishery is attributable to previous fishers’ generous or selfish intention. Consistent with findings from the previous experiments, we predicted that participants would give greater weight to a preceding fisher’s intention rather than the outcomes inherited.

4.1. Participants

Sample size was again determined before any data analysis. Given the relatively small effect size found in Experiment 1B, we chose a sample size per group of 65 for the main effect. Two hundred sixty-four participants who had not participated in the previous studies took part in a larger packet study that took place at Duke University in exchange for $16 (65% female; Mean age = 26.18 years, SD = 10.08 years, 18–73 years; 75% Duke students, 22% local residents, and 3% non-Duke students). Our experiment took approximately 10 min to complete.

4.2. Procedure and materials

Participants were put in the role of an owner of a large commercial fishing business. They were told that this was the last year that they would be in business as they were retiring for personal reasons. They had recently received a report conducted by the National Marine Fisheries Service (NMFS), the authority figure of the fishing industry in North America, about a problem of overexploitation of the fish resource. The NMFS had recommended them to reduce their harvest by 50% in order to allow the particular species of fish sustain its existence into the future for the benefit of future generation of fishers. They were told that since they were the largest commercial fishing company in the industry, their harvest would have the greatest impact on the future of the fishery. At maximum capacity, they could harvest 1000 metric tons (100%). Thus, the NMFS was asking them to harvest only 500 metric
tons this year (50%). The request was not legally enforceable; participants were asked to limit their harvest voluntarily. They were also told that their personal savings for retirement were modest.

4.2.2. Outcome manipulation

The current condition of the fishery; the fishery that participants currently had was in either good or bad condition. Thus, depending on whether participants were in the generous or selfish intention condition, the connection between intention and the outcome was stated. When intention and outcome were congruent – i.e., generous intention with good outcomes or selfish intention with bad outcomes – we told participants that because of the previous fishing company’s decision, the species of fish that were in danger were able to recover or reduced substantially, and consequently, the fishery that they were facing today was in good or bad condition. In contrast, when intention and outcome were incongruent – i.e., generous intention with bad outcomes or selfish intention with good outcomes – we told participants that fortunately/unfortunately, sometimes nature behaves in unpredictable ways; despite the fishing company’s decision, the species of fish that were in danger was able or unable to recover substantially, and, consequently, the fishery that they were facing today was in good or bad condition.

4.2.3. Harvesting decisions

We asked participants to decide at what capacity they would operate. Participants indicated the amount of fish they would like to harvest between 500 (50%) and 1000 (100%) metric tons.

4.2.4. Intention manipulation check

We used the same manipulation check rating that was used in Experiment 1B with the exception that we replaced “previous participants” with “previous generations of fishers”. Participants indicated their level of agreement with the following statements: Previous generations of fishers had good intentions in his/her harvest decisions.; Previous generations of fishers was generous in his/her harvest decision; The behavior of the previous fishers was fair (α = .90).

4.2.5. Outcome manipulation check

Participants indicated their level of agreement with the following statements: The current state of the fishery is in good condition.; Regardless of what previous fishers did, I received good outcomes.; The outcomes I inherited were good (α = .65). We averaged these items to create a composite index of the outcome manipulation check.

4.3. Results

4.3.1. Intention manipulation check

We conducted a one-way analysis of variance (ANOVA) with the intention of the previous fishers (generous vs. selfish) as the between-subjects factor on the intention manipulation check rating. We found a significant difference between the two intention conditions, F(1,262) = 201.56, p < .001, η² = .75. Previous fishers who responded to the NMFS’s request and cut their harvest in half were more likely to be viewed as generous and fair (Mgenerous = 5.07, SD = 1.29) than those who did not respond to the request (Mselfish = 2.91, SD = 1.17).

4.3.2. Outcome manipulation check

We conducted a one-way ANOVA with the outcome of the fishery (good vs. bad) as the between-subjects factor on the outcome manipulation check rating. There was a significant difference between the two outcome conditions, F(1,262) = 59.51, p < .001, η² = .17. Participants whose fishery was in good condition reported significantly higher rating (Mgood = 4.41, SD = 1.04) than those in the bad condition (Mbad = 3.94, SD = 1.10). Thus, our outcome manipulation was successful.

4.3.3. Harvesting decisions

We conducted a two-way ANOVA with intention and outcome as the between-subjects factors and the amount of fish they would like to harvest. We found a significant main effect of intention on the harvest amount, F(1,260) = 13.39, p < .001, η² = .05. Participants whose previous fishers had generous intention were more likely to cut their harvest (Mgenerous = 581.81, SD = 111.48) than those in the selfish intention condition (Mselfish = 602.91, SD = 120.99). The main effect of outcome was not significant (F < 1). There was a weak interaction between intention and outcome, F(1,260) = 3.89, p = .05, η² = .02. The effect of having the current fishery in good condition led participants to cut their harvest in the generous intention condition (Mgenerous-good = 560.71, SD = 97.50 vs. Mgenerous-bad = 602.91, SD = 120.99; F(1,260) = 3.62, p = .06, η² = .01) whereas it increased their harvest in the selfish intention condition, albeit insignificantly (Mselfish-good = 649.00, SD = 144.83 vs. Mselfish-bad = 629.33, SD = 140.50; F < 1, n.s.).

4.4. Discussion

The results of Experiment 2 bolster our argument that previous generations’ intention is more influential in determining the ways in which present decision makers allocate resources to future others than the current outcome. Regardless of whether the current fishery was in a good or bad condition, participants were more likely to cut their harvest and reserve resource for future generations when previous generations of fishers helped the species sustain over time. In contrast, when previous fishers tried to maximize their profit by harvesting fish at full capacity, participants were also less likely to cut their harvest regardless of their current condition.

Experiment 2 also allowed us to rule out the possibility that the effect of intention was likely due to the ineffective outcome manipulation. In this study, the current condition of the fishery was explicitly stated as either good or bad, which was different from the previous studies where the distinction between good and bad outcomes was rather arbitrary. In addition, by including the outcome manipulation check, we could confirm that perceived outcome was psychologically salient and consistent with our manipulation. Thus, Experiment 2 successfully supported Hypothesis 1.

5. Experiment 3: Organizational investment task

In Experiment 3, we sought to replicate and extend the findings from previous studies in several ways. First, we used a decision making task involving stakeholders making financial decisions to strengthen the intergenerational framing in the context of organizational decision making. In this task, participants were put in the role of an organizational decision maker who planned to retire from the firm soon. The decision maker faced the option of whether to withdraw money from an organizational fund for themselves or to leave the money for the next
stakeholder’s reinvestment. Thus, the remaining funds reflected the extent to which people prioritized the collective interest of the firm and the interests of future generations over the decision makers’ personal profit. Additionally, following our theorizing that the intention of past generations influences present decision makers through feelings of social responsibility and increasing concern for the future, we tested Hypothesis 2 by exploring the mediating role of stewardship in the relationship between perceived intentions of prior generations and generosity to future generations.

Last, in order to test the effect of knowing the preceding generation's intention more clearly, we added control conditions in which no information about the intentions and/or the outcomes was given to participants. This control condition allowed us to examine how the presence of information about past generations' behavior differs from an 'unknown' past. Specifically, the control conditions can help us tease apart whether decision makers inferred the intention of previous generations from the outcome they received in the absence of information about intention. We predict that, when information about intention is unavailable, people will infer past generations' intentions from the outcome inherited. Likewise, in the absence of information about outcome, people will rely on past generations’ intentions to infer the outcome.

5.1. Participants

Sample size was determined before any data analysis. Similar to Experiment 2, we chose a sample size per group of between 65 and 70 and recruited 653 online participants (age = 18–90 years; Mean age = 32 years, SD = 11.42 years) through Amazon’s Mechanical Turk. Participants took part in a 20-minute online study in exchange for $1.50, which was a standard rate for this market. All participants were U.S. residents (57% male). To ensure the effectiveness of our experimental manipulation, we excluded participants from our analyses if they (a) were not native English speakers or (b) did not pay attention and fail to pass an instructional manipulation question given in the middle of the experiment (Oppenheimer, Meyvis, & Davidenko, 2009). Five percent of respondents were excluded as a result, and all analyses reported here are based on the remaining 621 participants.

5.2. Materials and procedure

We experimentally manipulated intention and outcome. We also added control conditions in which no information about the intention and/or the outcome was given to participants. Thus, our study design involved a 3 (generous intention vs. selfish intention vs. intention unknown) × 3 (good outcome vs. bad outcome vs. outcome unknown) between-subjects design.

5.2.1. Organizational investment task

We used an adapted version of the managerial time horizon task developed by Mannix and Loewenstein (1994). In this task, participants were put in the role of a stakeholding partner at a hi-tech computer firm and told that they were about to retire from the firm at the end of the firm’s fiscal quarter. They were allowed to take out some money from a resource pool from the company as their compensation. With a pool of $10,000, a one-time withdrawal between $0 and $10,000 was permitted. We asked participants to decide how much money they would like to take out as their individual profits and how much money to leave behind for the firm and their next stakeholders’ reinvestment.

5.2.2. Intention manipulation

Participants were then randomly assigned to one of the three intention conditions. In the generous intention condition, participants were told that their predecessor withdrew a small amount for themselves (i.e., < 10% of the total resource) and left behind a generous amount for the firm (i.e., over 90% of the resource). In the selfish intention condition, they were told that their predecessor withdrew a large amount for themselves (i.e., over 90% of the total resource) and left behind a negligible amount for the firm (i.e., < 10% of the total resource). In the control condition, participants were not given any information about their predecessor’s intention.

5.2.3. Outcome manipulation

We manipulated outcome as a result of the rate of return at the time the previous stakeholders made the decision. Importantly, we kept the actual amount of resources available constant, but framed the amount of money as a good versus a bad outcome due to the market rate. Specifically, in the good outcome condition, participants were told that the rate of return was high, and as a result, it increased the resource pool size for investment to $10,000. In the bad outcome condition, participants were told that the rate of return was low, and as a result, it decreased the resource pool to $10,000. In the control condition, participants were not given any information about the market rate in the prior generation.

5.2.4. Allocation decision

After reading all the information, participants indicated the amount they would keep for their added income and the amount they would leave for the firm’s reinvestment, adding up to a total of $10,000.

5.2.5. Stewardship

Next, participants completed a six-item stewardship scale (α = .88) adapted from Wade-Benzoni et al. (2008). Consistent with the conceptual definition of stewardship, and the scale used by Wade-Benzoni et al. (2008), our scale captured the extent to which people expressed concern about future outcomes and felt responsibility for future others. Furthermore, our scale expanded on the prior scale by also encompassing considerations of the past. Participants indicated the extent to which they agreed with each statement on a 7-point Likert-type scale, where 1 = strongly disagree and 7 = strongly agree. Scale items included: I feel a responsibility for addressing what the previous stakeholders have done; I should help to improve the current situation of the firm no matter how good or bad it is now; I feel a responsibility to address the previous stakeholder’s actions and attitudes toward the firm and their replacements’ future reinvestment; The outcome to my replacement was important in my decision; My goal was to look after the interests of my replacement; This withdrawal decision was an opportunity to provide benefits to the firm and my replacement.

5.2.6. Intent manipulation check

To assess whether our intention manipulation was successful, participants indicated the extent to which they agreed with each statement on a 7-point Likert-type scale, where 1 = strongly disagree and 7 = strongly agree. Our measure included the following items: The previous stakeholder was generous in his/her withdrawal decision; The previous stakeholder had good intentions in their decisions about how much money they left for me to reinvest; The behavior of the previous stakeholder was fair (α = .90).

5.3. Results

5.3.1. Intention perception

As a manipulation check, we ran a one-way ANOVA with intention as the between subject factor on the intention manipulation scale. Results indicated a significant main effect, F(2,618) = 455.80, p < .001, ηp² = .60. Planned contrast analyses revealed that the rating of the generous intention condition (Mgenerous = 6.13, SD = .75) was significantly higher than the selfish intention condition (Mselfish = 3.10, SD = 1.23; t(618) = 30.17, p < .001, d = 2.96) and the intention unknown condition (Mint-unknown = 4.50, SD = 1.02; t(618) = 16.09, p < .001, d = 1.81). The rating in the unknown condition was significantly higher than the selfish intention condition, t(618) = 13.97,
p < .001, d = 1.24. Thus, our intent manipulation was effective.

To examine the effect of outcome on perceptions of intention when intentions were not explicitly known, we ran a one-way ANOVA with the subset of participants who were in the unknown intention condition (n = 205). There was a significant effect of outcome on intention perceptions when intentions were not specified, F(2,202) = 22.48, p < .001, ηp² = .18. Planned contrasts showed that all of the three outcome conditions were different from one another on the rating. Generous intention perceptions were significantly greater when outcomes were good (Mgood = 5.05, SD = 1.03) compared to when outcomes were bad (Mbad = 4.02, SD = .94; t(202) = 6.70, p < .001; d = .92) and outcomes were unknown (Munk-known = 4.51, SD = .78; t(202) = 3.30, p < .001, d = .60). The difference between the bad outcome condition and the control condition was also significant (t(202) = 3.04, p = .003, d = .56). Thus, inheriting a good outcome increased the perception of the good intentions of the previous generation compared to inheriting a bad outcome, when information about the intentions of prior generation was not available.

5.3.2. Organizational investment task

We first conducted a two-way ANOVA with intention and outcome as the between-subjects factors and the allocation amount for the firm as the dependent variable. We found a significant main effect of intention, F (2,612) = 34.41, p < .001, ηp² = .10. Participants in the generous intention condition left more money behind for their successor (Mgenerous = 5436.21, SD = 2869.73) than participants in the selfish intention (Mselfish = 3467.29, SD = 2271.25; t(618) = 7.93, p < .001, d = .76) and the control conditions (Munk-known = 3991.40, SD = 2420.67; t(618) = 5.78, p < .001, d = .54). The allocation amount of the intention unknown condition was also significantly higher than the selfish intention condition, t(618) = 2.11, p < .05, d = .22. The main effect of outcome was not significant (p = .28), and none of the simple effects of outcome within each level of the intention was statistically significant (Intention unknown: p = .12; Selfish: p = .25, and Generous: p = .08, ηp² < .01).

There was a weak interaction between intention and outcome, F (4,612) = 2.40, p = .05, ηp² = .02. Pairwise comparisons showed that, when the outcome was bad, the effect of the intention on the allocation amount was less robust (F(2,612) = 5.97, p = .003, ηp² = .02) than when the outcome was unknown (F(2,612) = 20.94, p < .001, ηp² = .06) or good (F(2,612) = 11.49, p < .001, ηp² = .04). In particular, in the bad outcome condition, there was no significant difference between the unknown and the selfish intention condition in the allocation amount (Mselfish = 3798.88, SD = 2439.21 vs. Munk-known = 3582.28, SD = 2436.69; p = .60) whereas the difference was significant when the outcome was unknown (Mselfish = 3104.20, SD = 1987.70 vs. Munk-known = 4009.05, SD = 2431.22; p = .04) or good (Mselfish = 3475.69, SD = 2331.06 vs. Munk-known = 4445.37, SD = 2344.46; p = .03). Table 1 summarizes sample means and standard deviations for all the nine conditions.

5.3.3. Stewardship

Next, we examined the effect of outcome and intention on participants’ feelings of stewardship. Using a two-way ANOVA, we found a significant main effect of intention, F(2,612) = 8.74, p < .001, ηp² = .03. Participants demonstrated greater feelings of stewardship in the generous intention condition (Mgenerous = 4.62, SD = 1.29) than those in the selfish (Mselfish = 4.29, SD = 1.20; t(618) = 2.78, p = .006) and the control conditions (Munk-known = 4.11, SD = 1.12; t(618) = 4.21, p < .001). There was no difference between the selfish intention condition and the control condition (p = .17). Neither outcome main effect (p = .85) nor the intention-outcome interaction was statistically significant (p = .33).

5.3.4. Mediation analysis

Next, we conducted mediation analyses to examine whether feelings of stewardship mediated the effect of intention on allocation decisions. Since our mediation analysis involved a multi-categorical predictor with three levels – unknown, selfish, and generous intention – we followed the advice of Hayes and Preacher (2014) examining the relative effects of knowing the previous stakeholder’s generous or selfish intention on stewardship and the allocation amount by using indicator coding, which allowed us to use the unknown condition as the reference category in the mediation model (see Fig. 2 for the model). We found that, relative to the unknown condition, knowing the generous intention of the previous stakeholders predicted greater feelings of stewardship (b = .51, SE = .12, r(618) = 4.21, p < .001), which in turn increased the allocation amount (b = 1328.94, SE = 63.38, r(617) = 20.97, p < .001). However, the selfish intention was not related to the level of stewardship (b = .18, p = .15). Therefore, stewardship accounted for the link between awareness of previous stakeholder’s generous intention and the allocation amount (b = 677.71, SE = 161.53, bias-corrected 95% C.I. = [364.7895, 1002.6836], 20,000 bootstrap samples) whereas the indirect path was not significant in the selfish intention condition (b = 232.65, bias-corrected 95% C.I. = [−66.3958, 540.7844]). In sum, relative to the control (i.e., intention unknown), participants in the generous intention condition left the allocation amounts that were 677.71 units larger as the result of the positive effect of generational intention on increasing feelings of stewardship.

5.4. Discussion

Experiment 3 replicated the findings of Experiment 1 and further explored a possible psychological mechanism underlying the effect of the intentions of prior generations on intergenerational decisions. Consistent with the findings from Experiment 1, participants who read about the previous stakeholder’s generous intention left more of the resource for the succeeding generation upon leaving the firm. Furthermore, the extent to which feelings of stewardship were enacted by the transparency of the past accounted for the link between good intention and the allocation amount. This mediation suggests that an awareness of generous intention activates a future-other oriented mindset, which leads decision makers to act more generously toward future others. There was no indirect effect of knowing selfish intention through stewardship. In other words, relative to the control condition, although knowing good intentions significantly increased the level of stewardship, knowing selfish intention did not affect one’s sense of ongoing responsibility for future others. Also, consistent with our theoretical expectations, when information about intention was absent, people inferred the level of generous intention of the preceding generation based on the outcomes they inherited. This finding highlights the importance of knowing the intention of prior generations and the deleterious consequences of failing to know about the generous intentions of prior generations when inherited outcomes are undesirable.

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<td>Good</td>
<td>4445.37</td>
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Table 1: Results from Experiment 3: Mean allocation amounts as a function of previous partners’ intention (unknown vs. selfish vs. generous) and outcome (unknown vs. bad vs. good).

Note: * The mean difference is nonsignificant (p = .60). Other comparisons are all significant at the 0.05 level. Participants indicated the amount they would leave for the firm’s reinvestment between 0 and $10,000.
6. Experiment 4: Legacy intervention

In Experiment 4, in addition to replicating the findings from the previous experiments using the same allocation context and task as Experiment 3, we also tested Hypothesis 3 by examining the role of legacy motivation in alleviating the adverse effect of knowing past generations’ selfish intent. Specifically, we examined whether inducing legacy motivations would help people to circumvent the effect of past generations’ self-serving behavior.

6.1. Participants

Sample size was determined before any data analysis. Given the effect size found in Experiment 3, we chose a similar sample size of approximately 60 per group. Four hundred and fifty-four participants (age = 18–73 years; Mean age = 34 years, SD = 11.62 years) who did not complete the previous experiment were recruited through Amazon’s Mechanical Turk. Participants took part in a 15-minute online study in exchange for $1. All participants were U.S. residents (61% male).

6.2. Materials and procedure

Experiment 4 used a 2 (legacy motivation: induction vs. control) × 2 (intention: generous vs. selfish) × 2 (outcome: good vs. bad) between-subjects design. First, participants who were randomly assigned to the legacy induction condition wrote a brief essay about the ways in which they would like to have an impact on future generations (Zaval, Markowitz, & Weber, 2015). Next, all participants completed the same allocation task (Mannix & Loewenstein, 1994) that was used in Experiment 2, which contained our intention and outcome experimental manipulations. They then completed the stewardship scale, the intention manipulation check questions, and demographics questions.

6.2.1. Legacy motivation induction

We used an adapted version of the legacy motive induction task developed by Zaval et al. (2015). This writing task has been shown to induce domain-general legacy motivation and increase the salience of future generations that will benefit from one’s legacy. Participants were randomly assigned to one of two experimental conditions. In the legacy induction condition, participants were asked to write a brief essay about the ways in which they would like to have an impact on future generations. Specifically, they were asked to think about the ways in which they would like to have an impact on other people in the future, how they would like to be remembered by future generations, and how they would like the world to be different as a result of themselves having lived. They were told that the task should take them approximately 5–7 min to complete and should be roughly half a page long. Consistent with the original procedure used by Zaval et al. (2015), this writing task was omitted in the control condition.

6.2.2. Organizational investment task

We used the same allocation task (Mannix & Loewenstein, 1994) that was used in Experiment 3. With a pool of $10,000, we asked participants to decide how much money they would like to withdraw as their individual profit and how much money to leave behind for the firm and their successor’s reinvestment.

6.2.3. Intention manipulation

Participants were randomly assigned to one of the two intention conditions. In the generous intention condition, participants were told that their previous stakeholders left behind over 90% of the resource for the firm. In the selfish intention condition, they were told that their previous stakeholders withdrew over 90% of the resource for their own individual profit.

6.2.4. Outcome manipulation

Next, we provided information about the rate of return at the time the previous stakeholders made the decision. In the good outcome condition, participants were told that the rate of return was high, and as a result, it increased the resource pool size for investment to $10,000. In the bad outcome condition, participants were told that the rate of return was low, and as a result, it decreased the resource pool to $10,000.

6.2.5. Allocation decision

After reading all the information, participants indicated the amount for their added income and the firm’s reinvestment, adding up to a total of $10,000.
6.2.6. Stewardship
Next, participants completed the same stewardship scale that was described in Experiment 2 (α = .93).

6.2.7. Intent manipulation check
Participants completed the same intent manipulation check questions that were described in Experiment 3 (α = .95).

6.3. Results
6.3.1. Intent manipulation check
We conducted a one-way ANOVA with intention as the between-subjects factor and the intention manipulation check as the dependent variable. This analysis revealed a significant main effect of intention (F(1,452) = 525.97, p < .001). Participants in the generous intention condition (Mgenerous = 4.99, SD = .88) rated the previous generation to be more generous than participants in the bad intention condition (Mselfish = 2.72, SD = 1.21).2

6.3.2. Organizational investment task
We conducted a three-way ANOVA with legacy, intention, and outcome as the between-subjects factors and the allocation amount for the firm as the dependent variable. We found a significant main effect of intention, F(1,446) = 35.80, p < .001, ηp² = .07. Participants in the generous intention condition indicated that they were willing to leave more money behind for their successor (Mgenerous = 5701.08, SD = 2705.25) than participants in the selfish intention condition (Mselfish = 3884.04, SD = 2688.31). Although there was no main effect of legacy induction (p = .08, ηp² < .01), we found a significant interaction between intention and the legacy induction conditions, F(1,446) = 14.32, p < .001, ηp² = .03. As shown in Fig. 3, a test of simple effects revealed that the legacy induction had a significant effect on the allocation amount in the selfish intention condition (F(1,446) = 15.35, p < .001, ηp² = .03), such that participants who were induced to think about their legacy were more generous in their allocation decision for the future generation (Mlegacy = 4802.20, SD = 2733.85) than participants who were in the control condition (Mcontrol = 3384.35, SD = 2535.66). In contrast, the legacy motive induction did not affect allocation decisions of participants who were informed of the generous intention of the previous generation (Mlegacy = 5343.57, SD = 2970.08 vs. Mcontrol = 5911.09, SD = 2524.15; p = .16, ηp² < .01). Thus, Hypothesis 3 was supported. We also found a significant intention and outcome interaction, F(1,446) = 9.17, p = .003, ηp² = .02. Tests of simple effects revealed that the effect of intention was more robust when the outcome was good (F(1,446) = 40.49, p < .001, ηp² = .08; Mgenerous = 6137.39, SD = 2538.54 vs. Mselfish = 3575.95, SD = 2556.02) than when the outcome was bad (F(1,446) = 4.38, p = .037, ηp² = .01; Mgenerous = 5298.05, SD = 2801.19, Mselfish = 4217.56, SD = 2798.13). The main effect of outcome, the legacy-outcome interaction, and the three-way interaction were not statistically significant (Fs < 1, n.s.)

6.3.3. Stewardship
Next, we conducted a three-way ANOVA with legacy, intention, and outcome as the between-subjects factors and the stewardship scale as the dependent variable. Analysis revealed a significant main effect of intention: participants reported greater feelings of stewardship in the generous intention condition than participants in the selfish intention condition (Mgenerous = 4.26, SD = .99 vs. Mselfish = 3.91, SD = 1.14; F(1,446) = 5.39, p = .02, ηp² = .01). This main effect was qualified by a significant interaction between intention and legacy induction, F(1,446) = 17.63, p < .001, ηp² = .04. Tests of simple effects revealed that, when the intention was selfish, participants in the legacy induction condition reported greater feelings of stewardship than participants in the control condition (Mlegacy = 4.29, SD = 1.05 vs. Mcontrol = 3.71, SD = 1.14; p < .001, ηp² = .03). However, the effect of legacy induction was also significant, albeit weakly, when the intention was generous (Mlegacy = 4.06, SD = 1.14 vs. Mcontrol = 4.37, SD = .87; p = .052, ηp² < .01). In addition, there was a significant interaction between intention and outcome, F(1,446) = 5.25, p = .02, ηp² = .01. The effect of intention was significant in the good outcome condition (F(1,446) = 10.61, p = .001, ηp² = .02; Mgenerous = 4.46, SD = .91 vs. Mselfish = 3.88, SD = 1.25), but not in the bad outcome condition (p = .98; Mgenerous = 4.08, SD = 1.03 vs. Mselfish = 3.95, SD = 1.02). The main effects of outcome (p = .06, ηp² < .01) and legacy inductions (p = .15) were not statistically significant.

6.3.4. Mediation analysis
Finally, we conducted a mediated moderation analysis to examine the role of stewardship in the relationships among intention, legacy motivation, and allocation decisions. Using Model 8 of the PROCESS model (Hayes, 2013), we found a significant conditional indirect effect of the intention-legacy interaction on the allocation amount through stewardship (b = −1317.59, SE = 318.23, bias-corrected 95% C.I. = [−1958.3346, −715.8617], 20,000 bootstrap samples). There was a significant interaction between previous stakeholders’ intention and legacy motivation on stewardship (b = −.89, SE = .20, t(450) = −4.35, p < .001), and feelings of stewardship subsequently predicted a larger allocation amount (b = 1477.83, SE = 97.00, t(449) = 15.23, p < .001). The intention-legacy motivation interaction no longer predicted the allocation amount when stewardship was included in the model (b = −667.78, SE = 430.18, t(449) = −1.55, p = .12). Therefore, stewardship accounted for the link between the previous stakeholder’s generous intention and the allocation amount in the control condition (b = 983.46, SE = 178.56, bias-corrected 95% C.I. = [640.5295, 1341.5763], 20,000 bootstrap samples), which was consistent with the findings from Experiment 2, whereas the indirect path was not significant in the presence of legacy motivation, b = −334.13, 95% C.I. = [−847.1199, 159.9802]. Once again, Hypotheses 2 and 3 were supported by the mediated moderation analysis.

6.4. Discussion
In Experiment 4, we replicated the findings from Experiments 3. Consistent with the findings from previous studies participants who read about the previous stakeholder’s generous intention were more likely to leave the resource in the firm for the succeeding generation upon leaving the firm. We also investigated the role of legacy motivation in overcoming the effect of selfish intentions of prior generations. As predicted, activating the legacy motivation prevented people from modeling the self-serving behavior of prior generations. In the face of the previous stakeholders’ selfish intentions, participants whose legacy motivations were activated were more generous toward their successor than participants who were not exposed to the legacy induction manipulation. However, participants who knew of the generous intention of the prior generation were not affected by the legacy motive induction. Furthermore, we demonstrated that this interaction between the previous stakeholder’s intention and legacy motivation was mediated by stewardship, suggesting that once stewardship is enacted by an awareness of generous intention, further efforts to activate a future-oriented mindset do not translate into additional benefit with respect to promoting more stewardship and greater levels of inter-generational benefit.

7. General discussion
In this paper, we examined the interplay of intent, outcome, stewardship, and legacy motivations in intergenerational allocation decisions. Our findings suggest that the awareness of preceding generations’
intention, rather than actual outcomes inherited, is much more influential in determining the ways in which present decision makers reciprocate resources to future others. Knowing the generous intentions of prior generations significantly increased the resource allocated for future generations in all five experiments, whereas selfish intentions had the opposite effect. When the previous generation’s intentions were apparent, the actual outcomes received from prior generations had little or no effect on the present generation’s decision making process. We further demonstrated two important psychological mechanisms underlying the link between the past and the future — feelings of stewardship and legacy motive. We found that the generosity of past generations increased the extent to which people expressed concerns and feelings of responsibility for the outcomes that future others will face, which subsequently increased the present generation’s allocation amount. Finally, as an intervention for the negative impacts of selfish intentions, inducing legacy motivations had a positive effect on intergenerational beneficence, particularly when the prior generation’s intentions were selfish.

Our results clarify the differential roles that the intention of prior generations and actual outcomes inherited have on present agents’ allocation decisions. Our findings suggest that people take into account the intended generosity of the preceding allocator. In contrast, the impact of outcome is almost completely absent when the intention of previous decision makers is made known. Concern that an intention-outcome discrepancy resulting from past decisions could be repeated in the future (i.e., one’s own decisions might not result in the intended outcome) might intensify aversion to uncertainty about the future and suppress generosity to future others. However, despite having bad outcomes, our results demonstrate that salient information about the intended generosity of past generations reduces the potential aversive effect of uncertainty on allocation decisions.

Due to temporal and interpersonal barriers, information about the intention of past generations is often unavailable in many situations, which leads people to rely more on outcomes inherited as information on how to make their own decisions. Results from Experiment 3 indicated that perceptions of intentions were solely dependent on outcomes when information about intention was absent. The perception of good intentions of prior generations increased as the market rate gave them a good resource pool and decreased as the market rate gave them a bad resource pool. It may be because people infer intentions from outcomes when they do not have explicit information about intentions. This finding emphasizes the importance of knowing intentions, and how they can be conflated with outcomes when information about intentions is not explicitly available.

Our experiments elucidated the unique effects of intention and outcome in determining intergenerational reciprocity. People do not jointly take into account the allocation process (i.e., intention) and the distributional consequence (i.e., outcome). The findings from all of our experiments suggest that selfish intention and bad outcome may not combine to potentially aggravate the situation. In other words, once a certain degree of the impact of selfish intention is observed, further information about bad outcomes has almost no effect. This does not reflect a normative prediction that people would allocate the least amount of money in situations where the selfish intention of past generations met bad luck resulting in unfavorable outcomes. Interestingly, the impact of knowing a preceding actor’s generous intention was even greater when the outcome was also good than when it was bad. In most of our studies, participants in the generous intention condition acted more generously in the case of good inherited outcomes than those in the bad outcome condition. These findings provide suggestive evidence that inherited outcomes may play a role in enhancing a sense of indebtedness and ongoing responsibility.

Our results also identified feelings of stewardship for future generations as a key underlying process by which past generations’ beneficent intention promotes intergenerational reciprocity. The mediation result supports our notion that knowing past generosity is causal in activating feelings of responsibility and other-oriented mindsets. To effectively imbue intergenerational responsibility, knowledge of the behavioral norm that has already been established by a preceding generation may be required to guide people to more morally responsible actions toward future others. More importantly, the mediating role of stewardship in promoting intergenerational beneficence reflects that the effect of intention found in the present research is unlikely to be the result of group conformity, which refers to situations in which an individual observes and conforms to the behavior of others wanting to fit in the group. In addition, subjective time perceptions and feelings of continuity may also play a role in the reciprocity pattern. In recent years, there has been growing interest in identifying the impact of an explicit or implicit awareness of a group’s past on individual group members’ attitudes and actions toward the future (e.g., Hershfield, Bang, & Weber, 2014; Jetten & Wohl, 2012). Therefore, the transparency of the past might increase group longevity and underscore the responsibility for provisioning the future.

We also contribute to the understanding of stewardship in organizations by empirically exploring a psychological factor — the perceived intention of prior generations — that can increase levels of stewardship. In particular, the effect of knowing the intended generosity of past generations was robust even when a bad outcome was inherited. This suggests that the transparency of a good past is particularly important in safeguarding feelings of stewardship against an unfavorable outcome. In addition, we help expand the theoretical understanding of stewardship by revealing the importance of the past in the enactment of
stewardship, which to date has been a primarily future-focused construct. Given the positive role of feelings of stewardship in encouraging intergenerational beneficence, understanding additional ways in which it can be activated and strengthened will be worthy of further investigation. Within our findings, there is good news that stewardship was generally high above the midpoint of the 7-point scale. In particular, knowing the past generation’s bad intention does not substantially decrease the extent to which people express concern for their succeeding generations whether it results in favorable or unfavorable outcomes. This implies that there may be room for future research on how to improve our overall understanding of the psychological antecedents of stewardship.

Much research on long-term decision making at both the individual and collective levels has predominately focused on motivational sources placed in the future, such as connectedness to one’s future-self (Bartels & Rips, 2010) and future generations (Wade-Benzoni, 2008). Our research provides a more multifaceted perspective on how to improve intergenerational decision making by bridging the past and the future. Specifically, our research sheds light on how legacy motives can help people to circumvent their predecessors’ transgressions. Extending prior research on legacy motivation (Wade-Benzoni et al., 2010; Zaval et al., 2015) and stewardship (Hernandez, 2012; Wade-Benzoni et al., 2008), which has primarily been future-focused, the results of our studies offer insights about how to leverage such latent motives for the future in relation to the past. In the face of selfish decisions of the preceding generation, activating legacy motivations can attenuate the negative effects of knowing the selfishness of the past generation and can safeguard a sense of stewardship. Our findings are consistent with prior research revealing an aversion to leaving a negative legacy (Wade-Benzoni et al., 2010). Once legacy motivations were enacted, people were more reluctant to behave selfishly toward their successor even if their predecessor was not generous to them. Both being cognizant of a good past and thinking about having an impact on the future had positive effects on intergenerational beneficence, but it is notable that legacy motives and past generosity did not combine to produce heightened effects, suggesting drawing attention to the past and the future are equally effective in reducing myopia.

Our findings contribute to the understanding of the way people perceive and evaluate the past as a means of envisioning the future. As discussed earlier, information about the behavior of past generations is often unavailable in many situations, which leads people to rely more on outcomes inherited as information on how to make their own decisions. Overall, our results suggest that people acknowledge when the previous generation was mostly fair and meant well even if it turned out to result in bad outcomes for the current generation. A central aspect of attribution theories in the context of reciprocity is that individuals are motivated to ask why a certain outcome has occurred and assign responsibility for the cause, especially when the outcome is unexpected and undesirable (Ross, 1977; Shaver, 1985). Because of the time delay between the past and the present in intergenerational allocations, people might be naturally aware of the possibility that anything can happen during the delay, which may attenuate the attributional tendency to assign blame to previous generations in the case of bad inherited outcomes. In this regard, our results may have important implications for the design of an incentive structure that motivates the pursuit of long-term and collective goals in organizations. Especially for decisions involving long-term considerations, such as an R&D investment or a business partnership, reward systems that recognize what was intended in the past may potentially promote individuals’ willingness to take responsibility for the future.

8. Conclusions

Our work brings together three central factors affecting intergenerational decisions that were considered separately in the past: reciprocity, stewardship, and legacy motivations. We elucidate conceptually and empirically how these three key forces come together to contribute to the psychology of intergenerational decision making. Good intentions of past generations promote stewardship, which subsequently leads to beneficial forward reciprocity to future generations. Enacting legacy motivations also promotes stewardship, providing an alternative way to promote stewardship that can be a substitute for good past intentions and thus promote intergenerational beneficence despite the absence of good past intentions.

Our findings highlight that forward-looking decisions do not take place in a vacuum. Today’s competitive environment typically compels individuals to go after short-term interests at the cost of future negative consequences. Companies that take the road less traveled are creating organizational frameworks that emphasize societal and collective value as decision-making criteria, instead of simply pursuing utilitarian rationality extracting more economic value (Kanter, 2011). In line with this notion, our research is fundamentally concerned with the way people make trade-offs between current individual benefits and future collective benefits. To the extent that intergenerational allocation decisions have important implications for individuals, organizations, and society at large, our findings offer new insights about how people use a preceding generation’s intentions as a determinant of the present and the future. The transparency of past intergenerational decisions may effectively nudge the current generation to consider its responsibility in caring for the future.

References


