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# The Egoism and Altruism of Intergenerational Behavior

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*Some of the most important issues in society today affect more than one generation of people. In this article, the authors offer a conceptual overview and integration of the research on intergenerational dilemmas—decisions that entail a tradeoff between one's own self-interest in the present and the interests of other people in the future. Intergenerational decisions are characterized by a combination of intertemporal (i.e., behaviors that affect the future) and interpersonal (i.e., behaviors that affect other people) components. Research on intergenerational dilemmas identifies factors that emerge from these dimensions and how they interact with each other to influence intergenerational beneficence. Critically, phenomena that result from the intersection of these two dimensions—such as immortality striving through legacy creation—are especially important in distinguishing intergenerational decisions from other related decision contexts.*

**Keywords:** *conflict; discounting; ethics; fairness; generations; intergenerational; justice; legacy; power; psychological distance; reciprocity; resource allocation; social responsibility; time*

Some of the most important issues that we face in society today involve long time horizons and thus have implications for future generations of people. Policy decisions concerning global climate change, social insurance systems, and national debt have the potential to constrain the options of future generations of citizens and policy makers for decades to come. Similarly, decision makers in large corporations make decisions about the allocation and consumption of resources that affect the welfare of communities and other stakeholders not only now but also well into the future. Even decisions at the individual level can have surprisingly far-reaching future

implications. For example, personal decisions about savings and consumption affect environmental and financial outcomes not only for our own family members' futures but also for the futures of others within our communities. In short, political, economic, and technological developments in the past century have changed the nature and scope of the issues that present-day societies face and have given present actors unprecedented power to shape the experience and options for future generations.

One of the most critical aspects of intergenerational considerations is that the interests of present and future generations are not always aligned. Maintaining sustainable levels of beneficial resources for future generations can require that the present generation forego desirable benefits. Similarly, protecting future generations from costly burdens may entail that the present generation incur some of the costs of managing those burdens themselves. In the areas of philosophy and law, recognition of this conflict between the interests of present and future actors has led scholars to theorize about the extent to which present actors are morally obligated to protect the interests of future others (e.g., Barry, 1989; Richards, 1981; Weiss, 1989). At the same time, economists have responded to intergenerational

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conflict by considering what balance between the interests of present decision makers and future others produces optimal levels of efficiency (e.g., Kotlikoff, 1992; Portney & Weyant, 1999). In contrast to these normative approaches, we take a descriptive approach and focus on the psychological factors that affect the actual decision-making behavior of present actors.

We define “intergenerational dilemmas” as decisions in which the interests of present decision makers are in conflict with the interests of future others. Psychological research on intergenerational dilemmas has been characterized by two primary boundary conditions. First, the present generation has complete unilateral decision-making power over decisions with consequences for future generations (i.e., future generations have no voice). Second, social actors are removed from the social exchange context over time, and thus they do not benefit or suffer from the consequences of their prior decisions. A key implication of this second boundary condition is that there is no opportunity for future generations to directly reciprocate the good or bad given to them by prior generations. The simultaneous presence of these features differentiates the psychology of intergenerational decisions from more typical intergroup situations in which other parties have their own voice and from traditional social dilemmas in which the decision maker remains part of the collective when the consequences of her or his decisions materialize.

Classic social dilemmas focus on tradeoffs between the individual and the collective (e.g., Brewer & Kramer, 1986; Dawes, 1980). In general, after the individuals make their decisions, they remain part of the collective and experience the group-level consequences that result from the combination of individual decisions. Social dilemmas can involve situations in which short- and long-term interests are at odds. In *social delayed traps*, behavior with immediate positive consequences for oneself results in long-term negative consequences for oneself and others (e.g., using water during a shortage); with *social delayed fences*, immediate effort is required to obtain a long-term collective goal (e.g., investing effort to develop a neighborhood park) (Messick & Brewer, 1983). In contrast to social dilemmas, in the intergenerational contexts we consider here, the decision makers exit the social exchange situation over time and thus do not experience the long-term consequences of their own decisions. The removal of the decision-making actors from the collective following their decision is a critical distinguishing feature between intergenerational and classic social dilemmas (including delayed traps and fences).

Research on intergenerational dilemmas adopts a broader definition of *generation* than its conventional application to a 20- to 30-year timeframe within society

and family contexts. Specifically, a generation is any individual or group that occupies a role for a limited time period and then transitions out of that role as another individual or group transitions in. For example, past, present, and future sets of organizational actors can be thought of as different generations in organizations. More critical than a particular timeframe, the simultaneous presence of particular features of the social context creates the psychological dynamics of intergenerational decisions. These features include power asymmetry between present actors and future others, lack of direct reciprocity across generations, conflict between the interests of present actors and future others, time delay between decisions and consequences, and role transition across generations of actors (see Wade-Benzoni, 2002a, for a thorough discussion of how generations are defined in this research; see Joshi, Dencker, Franz, & Martocchio, 2009, for a discussion of defining generations in organizational contexts).

A central imperative in the study of intergenerational dilemmas has been to identify factors that influence intergenerational beneficence, or the extent to which members of present generations are willing to sacrifice their own self-interest for the benefit of future others in the absence of economic or material incentives to present actors for doing so. Another key imperative is to uncover unexpected ways in which the complex constellation of features that characterize intergenerational contexts can combine to create phenomena distinctive to intergenerational contexts. Intergenerational dilemmas are characterized by a combination of intertemporal and interpersonal dimensions. In this article, we explain that although some main effects from the literatures that examine these two domains separately (e.g., the literature on the effect of time on personal choice and the literature on the effects of social discounting in self–other tradeoffs) do indeed generalize to intergenerational contexts, the combination of these two dimensions also produces unexpected effects that are unique to intergenerational dilemmas. Specifically, the combination of interpersonal and intertemporal distance that characterizes intergenerational decisions produces counterintuitive effects of outcome uncertainty and social power and provides an ideal opportunity for decision makers to leave a legacy, which in turn produces a variety of other distinctive phenomena that researchers are only beginning to explore in detail. Table 1 summarizes key distinctions among intertemporal, interpersonal, and intergenerational choice and addresses how they compare to one another.

Across multiple research papers and experiments, research on intergenerational dilemmas brings together insights from diverse research areas including behavioral decision theory, organizational behavior, intertemporal

**TABLE 1:** Key Distinctions Among Intertemporal Choice, Self–Other Tradeoffs, and Intergenerational Dilemmas

	<i>Intertemporal Personal Choice</i>	<i>Self–Other Tradeoffs</i>	<i>Intergenerational Dilemmas</i>
Type of distance in effect	intertemporal distance	interpersonal distance	both intertemporal and interpersonal distance
Type of discounting	intertemporal	social	intergenerational discounting = combination of intertemporal and social discounting
Actors' experience of outcomes (i.e., who and when)	decision maker experiences immediate and delayed consequences to the self	decision maker & others experience immediate consequences	decision maker experiences immediate consequences to the self; others experience delayed (i.e., future) consequences
Role of outcome uncertainty	outcome uncertainty contributes to preference for present fulfillment	outcome uncertainty contributes to egocentric biases	outcome uncertainty (with possibility of no future benefit) contributes to a sense of power and social responsibility
Role of reciprocity	none	possibility of direct reciprocation by others	possibility of indirect reciprocation (i.e., intergenerational reciprocity; "pay it forward")
Effect of affinity/group identification	none	enhances beneficence to others	enhances beneficence to others
Effect of social power of the decision maker	none	absolute power enhances beneficence; otherwise, power enhances self-interest	absolute power inherent in intergenerational contexts contributes to a sense of social responsibility and thus enhances beneficence to future others
Potential of legacy creation	none	none	uniquely suited to creation of a legacy, which in turn enhances beneficence

choice, social justice, egocentrism, social exchange, identification, generativity, terror management theory, and other areas of social psychology to shed light on the psychological dynamics of intergenerational decisions. We begin our exploration of this research by reviewing previous findings on intergenerational dilemmas that generalize from other research streams, specifically focusing on the effects of intertemporal distance on intertemporal discounting, the role of egocentric fairness judgments, and the effect of affinity and identification on social discounting. We then move on to examine more closely some of the unique and counterintuitive effects that emerge from the combination of the interpersonal and intertemporal dimensions of intergenerational decisions. We first focus on the distinctive nature of reciprocity in intergenerational contexts and describe how the behavior of previous generations affects present decision makers. We next examine the unexpected role of outcome uncertainty and social power in intergenerational contexts. We finally explore in detail the effects of the potential for legacy creation in intergenerational dilemmas. As we review this work, we also point to areas for further research, including considering the possible effects of relaxing the boundary conditions of previous research, and we identify the contributions of

intergenerational research to other key psychological theories.

### INTERPERSONAL AND INTERTEMPORAL DISTANCE IN INTERGENERATIONAL CONTEXTS

As previously explained, intergenerational decisions are characterized by the combination of intertemporal and interpersonal dimensions. That is, in intergenerational dilemmas, actions in the present affect outcomes in the future (intertemporal), and decisions and behaviors of one person or group affect outcomes to another person or group (interpersonal). These two dimensions represent domains of psychological distance between the decision maker and the outcome of the decision (Lieberman, Trope, & Stephan, 2007). Psychological distance is the quality of being removed from one's direct experience of reality or of lacking a sense of psychological immediacy (e.g., Bjorkman, 1984; Henderson, Trope, & Carnevale, 2006; Loewenstein, 1996; Trope & Liberman, 2003; Wong & Bagozzi, 2005).

Research into the effects of the two types of distance that characterize intergenerational contexts has demonstrated that some of their independent effects can be

generalized to intergenerational contexts. In other words, just as both forms of distance diminish beneficent behavior in other contexts (i.e., to the self in the future or to others in the present), they diminish intergenerational beneficence as well. In the following sections, we describe empirical findings relevant to these effects, and we begin by explaining the concept of intergenerational discounting, which emerges from both social and intertemporal discounting. We then explain that intertemporal distance produces intertemporal discounting and consequently diminishes intergenerational beneficence. We next explain how interpersonal distance produces social discounting and egocentric perceptions of fairness in intergenerational dilemmas. We also discuss how feelings of interpersonal affinity and identification affect perceptions of interpersonal distance. We then address recent findings with regard to the interaction between affinity and intertemporal distance before moving on to address the more counterintuitive effects that emerge from the combination of the two dimensions. The top portion of Figure 1 models the effects that generalize from research on other forms of distance in decision making, whereas the bottom portion of Figure 1 models the effects that emerge from the combination of the two dimensions.

### Intergenerational Discounting

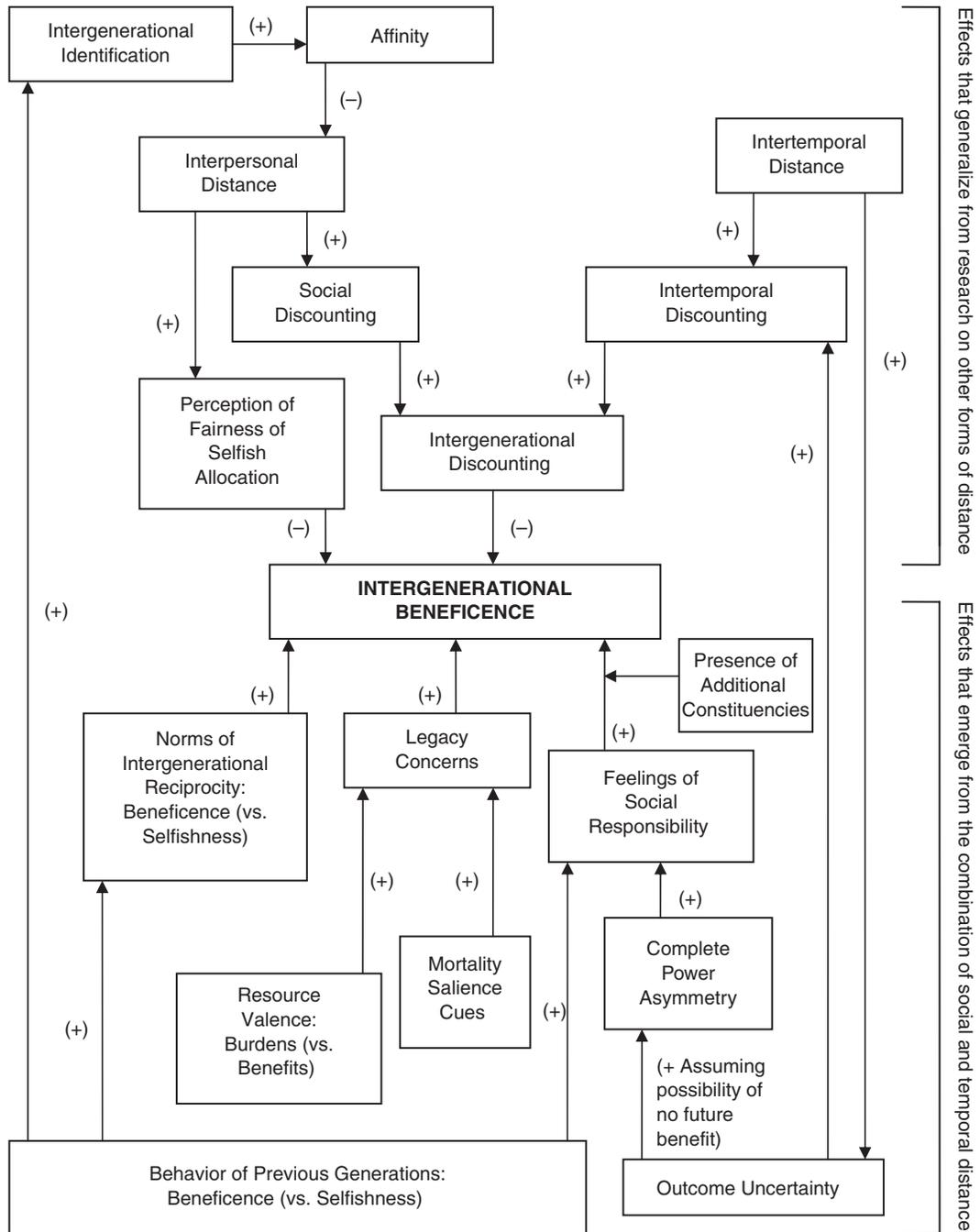
Discounting refers to a devaluation of an outcome. A discount function describes the relation between the perceived value of a good and a given dimension of discounting. The value of a commodity to an individual may be discounted in several ways. For example, individuals tend to discount the value of outcomes that accrue to others rather than to themselves (Loewenstein, Thompson, & Bazerman, 1989). Similarly, research has demonstrated that people discount outcomes to themselves when those outcomes are delayed (Loewenstein, 1992). Thus, both interpersonal distance and intertemporal distance produce discounting, and both types of discounting are relevant in intergenerational contexts. Specifically, intergenerational discounting occurs when individuals prefer smaller benefits for themselves now as opposed to larger benefits for others in the future (Wade-Benzoni, 1999, 2002a, 2008). The degree of intergenerational discounting reflects how much the interests of future generations are represented in current decisions. The greater the discount rate, the less the interests of future others are valued relative to the interests of the present decision maker (Brennan, 1995; Padilla, 2002). As a consequence, greater levels of intergenerational discounting produce lower levels of intergenerational beneficence.

Furthermore, intergenerational discounting is often magnified because of the ways in which the consequences, either positive or negative, to future generations often escalate over time and as resources are transferred from one generation to the next. In the case of long-term financial investments, for example, future generations are expected to experience greater monetary benefits relative to those foregone by earlier generations. Similarly, future generations can experience more serious negative consequences as a result of the present generation leaving burdens for them than would be experienced by the present generation had they handled the burdens themselves (such as toxic waste that is buried and consequently poisons drinking water decades later). This feature of increasing consequences adds complexity to intergenerational decisions, intensifies the dilemma that people face when allocating resources between themselves and future others, and captures an important aspect of intertemporal phenomena.

Intergenerational discounting, therefore, emerges as a combined effect of social and intertemporal discounting and often occurs in the context of the escalation of consequences over time. As a result, the self-interested effects of these two types of discounting are compounded in intergenerational dilemmas. It is difficult for people to forego consumption of resources in the present and save them for their own deferred benefit. It is also difficult for people to give up beneficial resources so that other people can have them. Thus, extrapolating from research that looks at self–other tradeoffs and intertemporal tradeoffs separately, we would expect these two components together to result in a formidable force working in opposition to intergenerational beneficence. Indeed, in the following two sections, we present evidence indicating that these two forms of distance do enhance self-interested behavior and thus affect the likelihood of beneficence.

### The Temporal Dimension: Intertemporal Discounting

Time delay between decisions and consequences has been shown to have systematic effects on allocations of resources. There is a well-established literature on intertemporal choice showing that people discount the value of resources that will be consumed in the future; in other words, individuals exhibit an inborn impatience and preference for immediate over postponed consumption (see Loewenstein, 1992, for a review). This intertemporal form of discounting occurs because, as time delay increases, people have greater difficulty fully understanding and envisioning the consequences of decisions. Specifically, long time horizons limit cognition such that time loses its realism as time perspective lengthens (von



**Figure 1** Model of key influences on intergenerational beneficence.

Bohm-Bawerk, 1889). In addition, outcome alternatives to a decision become less salient and harder to discriminate the farther in the future they are expected to occur (Pigou, 1920). Beyond cognitive limitations, however, motivational effects, such as the immediate pain of deferral, also make it difficult for people to delay benefits for the future.

As previously described, a key feature of intergenerational dilemmas is that the outcomes of intergenerational decisions are removed from the decision maker through the temporal delay that exists between decisions made in the present and the effect of those decisions on future generations. Research has shown that the finding from research on intrapersonal intertemporal choice that

greater time delays produce greater degrees of intertemporal discounting also generalizes to intergenerational contexts. For example, Wade-Benzoni (2008) conducted a study in which participants were given \$7 and asked to decide how much of the money to keep for themselves and how much to allocate to an individual who would participate in the study after them. Half of the participants were told that the person to whom they were allocating would be participating later in the same day, whereas the other half were told that the person to whom they were allocating would participate in the research in 6 months. Analyses revealed a significant main effect of time delay, such that participants allocated more money to the other individual in the short time delay condition than in the long time delay condition. This difference in allocation provides evidence of intergenerational discounting and supports the notion that increasing time delays decreases intergenerational beneficence. Thus, consistent with research on intertemporal personal choice, research on intergenerational dilemmas suggests that a greater time delay between decisions made in the present and the consequences of those decisions to future generations increases intergenerational discounting and diminishes intergenerational beneficence (Wade-Benzoni, 1999, 2008).

#### The Interpersonal Dimension: Social Discounting and Egocentrism

The traditional literature on intertemporal choice referenced earlier focuses on situations in which actors make decisions in the present that affect *themselves* in the future. Intergenerational tradeoffs, however, involve decisions made in the present that affect *others* in the future (Schelling, 1995; Wade-Benzoni, 1999, 2002a). As previously mentioned, the interpersonal dimension of intergenerational dilemmas produces both social discounting and egocentric interpretations of fairness in intergenerational contexts. Although both social discounting and egocentric interpretations of fairness can diminish intergenerational beneficence, we argue that affinity and identification with future others can diminish interpersonal distance, decrease social discounting, limit egocentric biases, and enhance intergenerational beneficence.

#### *Social Discounting*

Although people may care about the outcomes of others, individuals' decision-making behavior is typically driven by self-interest and tends to favor the self in tradeoffs between one's own and others' well-being (Loewenstein, 1996). This dynamic reflects the phenomenon of social discounting, in which the value of a

good is discounted when it accrues to others rather than to the self (Loewenstein et al., 1989; Rachlin & Raineri, 1992). With social discounting, the identity of the person experiencing the consumption of the resource can alter the subjective value of the benefit. For example, an individual may be willing to work for 1 hour to acquire \$10 for himself or herself but would only be willing to work for a few minutes to acquire the same amount of money for another person. Research into social discounting has demonstrated that the greater the interpersonal distance between oneself and others, the greater the degree of social discounting (Jones & Rachlin, 2006). In some intergenerational decisions, the particular future others who experience the future repercussions may be impossible to identify (e.g., a future class of MBA students who have not yet even decided to apply for business school) or may be yet to be born (e.g., future generations of citizens who will deal with the repercussions of global climate change over the next several centuries), and thus interpersonal distance can be quite high.

#### *Egocentric Perceptions of Fairness*

Previous research on social dilemmas has documented the existence of position effects (Budescu, Suleiman, & Rapoport, 1995), which occur when a decision maker's position in the order of requests in a common pool dilemma has a direct effect on the amount of resources requested. Specifically, previous research has found that occupying an earlier position leads individuals to increase the amount of resources they request (Budescu et al., 1995). Generalizing from this research to intergenerational contexts suggests that present decision makers may search for reasons to feel entitled to a large share of available benefits relative to what might be left for future others. Indeed, research on intergenerational dilemmas has found that the position of an individual in the generational sequence has a powerful effect on that individual's perceptions of fairness in intergenerational allocations.

An extensive body of research has shown that when people are personally involved in a situation, judgments of fairness are likely to be biased in a self-serving manner, even though such subjective perceptions can appear objective and unbiased to moral reasoners themselves—an effect labeled “egocentric interpretations of fairness” (e.g., Diekmann, Samuels, Ross, & Bazerman, 1997; Epley & Caruso, 2004; Messick & Sentis, 1979, 1983; Ross & Sicoly, 1979; Wade-Benzoni, Tenbrunsel, & Bazerman, 1996; Walster, Walster, & Berscheid, 1978). Individuals are motivated by self-interest to obtain benefits for and avoid burdens to themselves. They are also concerned with issues of justice, and they

like to believe that they have contributed their fair share to others and the common good. Self-serving interpretations of fairness provide a convenient reconciliation of these two apparently conflicting goals: Individuals can have what they want (e.g., a larger share of a limited desirable resource) and believe their actions are fair (Bazerman, Buisseret, & Wade-Benzoni, 1998; Bazerman, Wade-Benzoni, & Tenbrunsel, 1998).

Research has confirmed the role of egocentric biases in a variety of resource allocation contexts including negotiations (e.g., Babcock, Loewenstein, Issacharoff, & Camerer, 1995; Bazerman & Neale, 1982; Neale & Bazerman, 1983) and social dilemmas (Wade-Benzoni et al., 1996). The bias manifests itself as a strong tendency for people to justify allocating more of a limited resource to themselves relative to others on the basis of fairness. Furthermore, this effect has been found to generalize across different cultures (Wade-Benzoni et al., 2002), highlighting the pervasiveness of the phenomenon. Research on intergenerational dilemmas similarly shows that self-serving biases in fairness judgments play a strong and important role in the intergenerational domain as well.

In most societies, there is a presumption of a moral obligation toward future generations. People generally value the outcomes to future generations (Kempton, Boster, & Hartley, 1995) and tend to agree that fairness in the distribution of resources across generations should be upheld to some degree if societies are to persist and flourish over time. Egocentric fairness judgments, a phenomenon that emerges from the interpersonal dimension of intergenerational contexts, however, can be a psychological barrier to implementing well-intended fairness to future generations.

In a series of experiments, Wade-Benzoni, Hernandez, Medvec, and Messick (2008) found that fairness judgments in intergenerational resource allocations differ according to position in the intergenerational sequence. That is, individuals' judgments about what is fair for one generation to leave for the next depends on whether the decision maker is in the generation who is leaving the resources (generation  $x$ ) or the one for whom the resources are being left (generation  $x + 1$ ). Specifically, people believe it is fair for the preceding generation to leave fewer benefits for the succeeding generation when they are members of the preceding generation as compared to when they are in the succeeding generation. Fairness judgments made by the preceding and succeeding generations were also compared to those made by a third party outside of the intergenerational sequence with no vested interest in the outcome of the allocation. This baseline fairness evaluation by the neutral party served as an "objective standard" to help determine which role was the source of egocentrism. The independent

advisors' judgments closely followed those of the succeeding generation and were significantly different from those of the preceding generation, thus indicating that the source of egocentrism was in the preceding generation.

Given that intergenerational contexts are characterized by interpersonal distance between the decision maker and the future others who will experience the consequences of the decision, and further that present decision makers exhibit egocentric biases in their perceptions of the fairness of intergenerational resource allocations, the likelihood of individuals engaging in intergenerational beneficence appears to be limited. Research on the role of affinity in intergenerational allocations provides evidence, however, that the potential for intergenerational beneficence may not be as limited as it may seem at first glance. In the following section, we suggest that enhancing affinity and identification across generations can offer a means through which social discounting and egocentrism may be reduced.

#### *Affinity and Intergenerational Identification*

Affinity refers to a combination of empathy, perspective taking, and perceived oneness and is a function of the extent to which an individual feels empathetic toward and connected with future others (Batson, 1991; Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; Wade-Benzoni, 2008). When affinity is high, people have a sense of vicariously experiencing the outcomes of others and thus are better able to take their perspective. This feeling is highly related to the concept of closeness in interpersonal relationships (Aron & Aron, 1986; Aron, Aron, & Smollan, 1992; Aron, Aron, Tudor, & Nelson, 1991). Aron and Aron (1986) argue that closeness may lead individuals to perceive the other as included in the self. Aron et al. (1991) argue that, to the extent that another individual is perceived as being part of oneself, allocations that benefit the other are perceived as benefiting the self. Thus, affinity has a direct effect on perceptions of interpersonal distance and therefore has a main effect on social discounting: As affinity increases, social discounting decreases.

Research has provided some support for this effect in intergenerational contexts. For example, in one study, Wade-Benzoni (2008) measured participants' feelings of affinity with future others in a vignette based on the real-life crisis in the ocean's fisheries and found a positive relationship between affinity for future fishers and intergenerational beneficence in decisions concerning present fish consumption. Affinity with future generations appears to cause the outcomes to future generations to feel more immediate and personal (Wade-Benzoni, 1999, 2003, 2008). When affinity with future generations is high, future others may come to be understood

and experienced as part of oneself, which consequently aligns self-interest with the interests of the future others, reduces psychological distance, and promotes intergenerational beneficence. Furthermore, because interpersonal distance is necessary for the emergence of egocentric biases, it is likely that increased affinity would similarly mitigate the effects of egocentrism in perceptions of the fairness of intergenerational allocations. Further research should examine this implication.

For those interested in enhancing intergenerational beneficence, this finding raises an important question: How can affinity with future others be enhanced? Enhancing intergenerational affinity may appear to be challenging, given that a key boundary condition of previous research on intergenerational dilemmas has been that present decision makers and future others do not interact. Research has shown, however, that decision makers need not interact with future others to feel affinity for them; rather, they need only identify themselves as part of a common group with future others (Wade-Benzoni, 2008). In other words, to the extent that decision makers view their ingroup as a social entity that extends across generations, as ingroup identification increases, intergenerational beneficence will be enhanced. This finding is compatible with research in the areas of social identity and self-categorization, which has demonstrated that group members need not interact or even feel strong interpersonal ties to perceive themselves as members of a group (Brewer, 2000; Tajfel, 1982). It is also consistent with Gaertner and Dovidio's extensive work on the Common Ingroup Identity Model, which proposes that if members of different groups are led to conceive of themselves as members of a common ingroup rather than as members of separate groups, members' attitudes toward former outgroup members will become more positive as a result of the motivational and cognitive forces that emerge from ingroup formation (see Gaertner & Dovidio, 2005, and Dovidio, Gaertner, & Saguy, 2009, for reviews).

We therefore suggest that the enhancement of intergenerational identification may be an important avenue for the enhancement of intergenerational affinity and ultimately beneficence. Intergenerational identification refers to the perception or feeling of a common group identity with other (past and/or future) generations of actors (Wade-Benzoni, 2003). As such, the concept of identification is highly related to the concept of affinity in that the more an individual feels a sense of common group identity with other generations, the more likely that individual is to feel connected with future others, to engage in perspective taking concerning the interests of future others, and to have empathy for future others. A considerable range of factors that affect the extent of intergenerational identification has been identified,

including aspects of group social identity, the decision maker's motivation for self-enhancement, the decision maker's holistic needs, the specificity with which future others are identified, decision framing, and relations with previous generations (see Wade-Benzoni, 2003, for a detailed review).

Here, we suggest two potential avenues for enhancing intergenerational identification (and, consequently, intergenerational affinity and beneficence): emphasizing the role of past generations in producing present group identity and focusing on long-term group goals. First, theorists have argued that understandings of the past can have a powerful effect on feelings about the future (Sherif, 1966). In intergenerational contexts, feeling identified with past generations may be more readily facilitated than directly enhancing identification with future others because past generations are more readily identified and specified. In addition, the role that members of past generations have played in creating the present group context makes the connection between past and present more easily clarified than the connection between the present and the future. Critically, however, to the extent that a decision maker identifies with past generations, that individual has already come to view different generations as members of one common group. In addition, highlighting the role of past actors in affecting the present context can have the effect of encouraging present decision makers to view the ingroup as a group that has continuity over time through sequences of generations. These perceptions of common group identity across generations are likely to increase identification with, and thus affinity for, future generations. At the same time, highlighting the effect of past organizational actors can also serve as a reminder to present decision makers that they themselves may be remembered by future others, just as past actors are presently remembered. We therefore suggest that enhancing identification with past generations can help to overcome an obstacle to identification with future generations. As a result, the affinity that a decision maker feels with future generations may be increased by enhancing identification with past generations.

Second, research on group entitativity, or the extent to which a group is perceived by its members and others as a single coherent entity or unit, has demonstrated that groups that share common goals are perceived to be more entitative (Lickel et al., 2000). If this finding generalizes to intergenerational contexts, then we would expect that establishing long-term group goals that can only be ultimately realized by future generations of group members would encourage present decision makers to feel a sense of entitativity across generations because multiple generations would be required to work toward and achieve common goals. Given that previous research has also established that entitative groups have a high social

identity value (Lickel et al., 2000), it is likely that a sense of entitativity across generations would further enhance intergenerational identification, affinity, and beneficence. Further research should explore these possibilities.

### Interaction Between the Intertemporal and Interpersonal Dimensions

Before moving on to address the more counterintuitive effects that emerge from the combination of the two dimensions, we first briefly review a series of studies that examined both time and affinity in intergenerational resource allocations and revealed an interaction between the two variables (Wade-Benzoni, 2008). In one study, affinity with future generations and perceptions of temporal distance between decisions and consequences to future generations were both measured in a survey concerning participants' willingness to pay a gasoline tax in a decision positioned as an intergenerational tradeoff. Regression analyses revealed an interaction between the two measured variables. Analysis of the interaction revealed that there was a greater effect of affinity on intergenerational beneficence when temporal distance was low rather than high and that there was a greater effect of temporal distance on intergenerational beneficence when affinity was low rather than high. That is, when affinity with future generations was low, time delay between decisions and consequences had a greater effect on intergenerational decisions relative to when affinity was high. When time delay was low, affinity between present decision makers and future others had a greater effect relative to when time delay was high. These findings indicate that affinity has a greater impact on intergenerational beneficence when time delay is relatively short, while time has a greater impact when affinity is relatively low. In another study, time and affinity were both manipulated in a 2 (short vs. long time delay)  $\times$  2 (high vs. low affinity) experimental design involving a money allocation task. Analyses revealed an interaction between time and affinity, such that the condition that combined high affinity with short time delay was significantly different (exhibiting greater intergenerational beneficence) from the other three conditions. Thus, it may be the case that higher affinity increases the perceived value of beneficent behavior to the decision maker, whereas shorter time delays increase the perceived likelihood of having an effect. As such, individuals may feel more confident about the positive effect of forgoing personal self-interest to benefit others when both the perceived value of that behavior is high (high affinity) and the perceived likelihood of effect is high (low time delay). Further research should examine the nature of this interaction in more detail.

In summary, previous research has supported a model (see the top half of Figure 1) in which intertemporal distance increases intertemporal discounting, which in turn increases intergenerational discounting and diminishes intergenerational beneficence. Research has also indicated that interpersonal distance increases social discounting, which also increases intergenerational discounting and diminishes intergenerational beneficence. Interpersonal distance between present decision makers and future others also contributes to egocentric interpretations of fairness, in which present decision makers perceive that it is fair for them to keep a larger share of benefits for themselves relative to future actors than an independent observer would advocate. Existing theory and previous empirical work, however, also suggest that increasing affinity and identification across generations may diminish both the effects of social discounting and the effects of egocentrism, thus enhancing intergenerational beneficence. These findings are consistent with the findings in the literatures on intrapersonal intertemporal choice and on self-other tradeoffs. As we explain below, however, the combination of intertemporal and interpersonal dimensions that characterizes intergenerational decisions also produces a number of unique effects, some of which have the potential to actually reverse the negative effects of interpersonal and intertemporal distance on intergenerational beneficence. We now turn to a discussion of these dynamics.

### RECIPROCITY, UNCERTAINTY, AND LEGACY CREATION IN INTERGENERATIONAL CONTEXTS

The generalizations from the intertemporal and interpersonal choice literatures present a fairly straightforward image of intergenerational dilemmas as situations in which the independent effects of interpersonal and intertemporal distance combine in an additive fashion to minimize the likelihood of intergenerational beneficence. Substantial research on intergenerational dilemmas indicates, however, that these effects are sometimes more complicated than this generalized story suggests. Specifically, there are circumstances in which the roles of intertemporal and interpersonal distance are less important than the norms established by previous generations, and there are also circumstances in which the combination of intertemporal and interpersonal distance actually enhances, rather than diminishes, the likelihood of intergenerational beneficence (see the bottom half of Figure 1). In the following sections, we explain these counterintuitive findings by reviewing research on intergenerational reciprocity, the links between uncertainty and social power, and the role of legacy creation in intergenerational dilemmas.

## Reciprocity

Norms of reciprocity are fundamental to social relationships and are a basic metric against which determinations of justice are measured (McLean Parks, 1997). Gouldner (1960) suggests that reciprocity as a moral norm is one of the universal “principal components” of moral codes. He explains that norms of reciprocity provide the social system with stability, especially when there is a potential for exploitation in the presence of power disparities among parties. Similarly, Haidt (2004) argues that evolution has prepared humans for social life by equipping them with strongly emotion-laden norms for social interaction, of which reciprocity is one. He asserts that the anger and desire for vengeance associated with violations of the norm of reciprocity help to order social relations. As one of the most fundamental norms in social relationships, considerations of reciprocity naturally emerge from the interpersonal dimension of intergenerational decisions. The special form it takes in intergenerational decisions, however, is a function of the combined intertemporal and interpersonal dimensions.

The most traditional form of reciprocity involves mutual reinforcement by two parties of each other's actions (Blau, 1964; Gouldner, 1959, 1960; Parsons, 1951) and is characterized by a *quid pro quo* mentality. Because different generations participate in the social exchange context at different points in time, however, one generation may not benefit directly from the sacrifices it makes for future generations. Indeed, philosophers have cited the absence of traditional bonds of reciprocity as one of the most central reasons that people often do not act on the behalf of future generations (Care, 1982). This barrier can be understood by considering Trivers's (1971) theory of reciprocal altruism. According to Trivers, selection will discriminate against cheaters, where cheating is defined as failure to reciprocate, if cheating has subsequent adverse effects on their lives that outweigh the benefit of not reciprocating. Trivers argues that it will pay to cheat when the “others” will not find out, when they will not discontinue their altruism even if they do find out, or when they are unlikely to survive long enough to reciprocate adequately. In intergenerational dilemmas, all these conditions either hold or they are irrelevant. Future generations may find out about uncooperative behavior of earlier generations, but do not have the opportunity to directly reciprocate those behaviors once the members of earlier generations are no longer a part of the social exchange context. Thus, according to Trivers' model (as well as several other models of altruism) it always pays to “cheat” (i.e., not reciprocate) in such intergenerational contexts.<sup>1</sup>

This observation raises the question of why present generations would ever act on the behalf of future generations

in the absence of direct reciprocation opportunities. Arguments on behalf of future generations do not include the kind of actual reciprocity familiar in some contexts of intratemporal justice. Instead, proponents of intergenerational justice argue that present generations should treat future generations as they would like to have been treated by the generation preceding themselves (Rawls, 1971; Richards, 1981). Such arguments focus on the concept of moral reciprocity. The moral idea of reciprocity, which invokes thoughts of equality, is not that of reciprocal actual advantage but that of treating persons in the way one would reasonably like to be treated oneself (Richards, 1981). In this sense, then, moral reciprocity is not an actual form of reciprocity but is instead a type of ethical behavior.

The principle of reciprocity has also been used more broadly to refer to situations where people feel obligated to reciprocate others' actions, not by directly rewarding their benefactors but by benefiting other actors implicated in a social exchange situation that includes their benefactors and themselves (Levi-Strauss, 1949). This type of reciprocity, most commonly labeled “generalized exchange” (Ekeh, 1974; Levi-Strauss, 1949), involves three or more actors who are linked together in an integrated transaction in which reciprocations are indirect, not mutual (Ekeh, 1974). Generalized exchange is characterized by the lack of one-to-one correspondence between what two parties directly give to and take from one another. Research on intergenerational dilemmas shows that reciprocity can take on a more generalized form in intergenerational contexts such that people can “reciprocate” the good or evil left to them by previous generations by behaving similarly to the next generation (Wade-Benzoni, 2002a). 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. We term this behavior “intergenerational reciprocity.”

Intergenerational reciprocity involves reciprocating the behavior of previous generations forward to future others. Reciprocity can thus come into play as either a barrier or a facilitator of intergenerational beneficence, depending on the behavior of prior generations. This line of reasoning suggests that intergenerational decisions may have more far-reaching implications than present decision makers may realize. Not only do these decisions affect the next generation directly, but they also influence how the next generation will treat subsequent generations. Furthermore, research has indicated that modeling emerges as a significant determinant of moral judgments regardless of whether the modeling represents prosocial or self-interested behavior. Rutte, Wilke, and Messick (1987) suggest that, in situations involving the sequential use of a resource pool, individuals can infer a

norm of either relative selfishness or generosity from the behavior of the prior users of the resources.

Results from a series of experiments by Wade-Benzoni (2002a) support the idea that modeling plays a critical role in intergenerational behavior as well and further suggest that a combination of mechanisms underlie this effect, including reciprocal obligation and the establishment of an intergenerational norm. Consistent with notions of generalized exchange reciprocity, participants in these studies reported that a central motivation for their intergenerational beneficence was a sense of obligation and a need to “repay the debt” in the cases in which the prior generation was generous to them. Second, the behavior of prior generations served as a source of information about what might constitute appropriate intergenerational behavior. Thus, these findings indicate that the behavior of past generations can affect the behavior of present decision makers both through the prompting of feelings of social responsibility (i.e., a duty to “pay it forward”) and through the establishment of norms of behavior in intergenerational contexts.

It is critical to note, however, that although the role of modeling in generalized exchange can usefully be applied to intergenerational contexts, a key feature of generalized exchange contexts does not exist in intergenerational contexts. Specifically, in generalized exchange among contemporaries, the actors typically exist in the social exchange structure simultaneously. On this basis, generalized exchange is typically explained with reference to future personal benefits for the decision maker and trust of one’s contemporaries (Ekeh, 1974). However, these explanations are not applicable in intergenerational contexts. This critical difference produces a number of considerations for further research to explore.

For example, because the rewards that an actor receives usually are not directly contingent on the resources provided by that actor in generalized exchange, “free riding” can occur (i.e., an actor can receive benefits without contributing; Yamagishi & Cook, 1993). The lack of opportunity for future self-benefit in the intergenerational case causes the potential for a free rider problem to be even greater than with generalized exchange among contemporaries, potentially leading present decision makers to take advantage of the beneficence of previous generations without reciprocating that beneficent behavior to future others. Unlike generalized exchange contexts, in intergenerational contexts, the past and future actors are not empowered to punish a defecting present decision maker. This possibility of exacerbated free rider problems raises a critical question for further research: What are the factors that make intergenerational reciprocity more or less likely? Specifically,

although previous work has established that the behavior of previous generations can have a modeling effect on the behavior of present decision makers, we do not yet understand when this modeling effect is likely to emerge and when it is likely to be ignored. For example, when will the behavior of previous generations be viewed as an example of what not to do?

With respect to the factors that make intergenerational reciprocity more or less likely, theorists have highlighted the important role of trust in generalized exchange systems. Trust in such situations is based on the confidence that group members will reciprocate helpful behaviors, even if the specific recipient of past favors is missing or unable to fulfill his or her obligations, rather than being contingent on the belief that the specific recipient of a beneficent act will return the favor (Kramer, 1993). This form of group-based trust operates when individuals expect the probability of generalized reciprocity within a particular group to be high (Brewer, 1981). In the intergenerational case, however, where actors benefit first (from the behavior of past generations) and later have the chance to contribute (to future generations) with little or no probability of benefiting again, trust in the future reciprocation of others directly back to oneself cannot be a motive for contribution. Intergenerational contributions may, however, be based on the trust that the next generation would continue to pay it forward.

It is difficult, of course, to conceptualize trust in an individual or group that exists only in the future and with whom one has no chance to interact. We propose, however, that the idea of “identity-based trust” (Rousseau, Sitkin, Burt, & Camerer, 1998) may be applicable in intergenerational contexts. Specifically, it is possible that the trust that may underlie intergenerational reciprocity is driven primarily by a feeling of common identity of a group across generations. This suggestion is consistent with research on bounded generalized reciprocity (Yamagishi, Jin, & Kiyonari, 1999), which refers to a norm of reciprocity in which individuals are required to help other group members (but not outgroup members) and are also entitled to receive help from other group members (but not outgroup members). To the extent that such a norm exists within a given group and future generations are identified as part of the group (i.e., there is a high level of intergenerational identification), it is likely that intergenerational beneficence within that group would be high. Further research should explore the effect of intergenerational identification on intergenerational reciprocity. We expect that as intergenerational identification increases, the effect of past generations’ behavior on present decision makers will increase as well.

In addition, further research is needed to examine when moral reciprocity might trump intergenerational reciprocity. Perhaps it is the case that present decision makers might engage in a form of intergenerational identification that extends forward but not backward. That is, it is possible that present decision makers would identify highly with future others but not identify with past actors in their group. This dynamic may exist, for example, when new members of a group join the group after significant changes in the group's norms and culture. In such instances, individuals may feel alienated from the group's past with its dramatically different culture but may be more likely to feel a connection with future group members who will carry on the new group culture and identity. We suggest that it is possible that the effects of intergenerational reciprocity may be diminished and replaced with moral reciprocity when affinity with past others is particularly low.

Furthermore, in light of research on intergenerational reciprocity, it is especially important to be aware of the presence of egocentrism in intergenerational decisions because its effects may be even farther reaching in intergenerational contexts as compared to other resource allocation situations. Our interpretations of the past and translations to the future are likely to be subject to self-serving biases. Egocentrism may lead us to interpret the behavior of prior generations in such a way that enables us to justify on the basis of fairness more self-serving behavior with respect to future generations. Specifically, we may view the behavior of prior generations as less generous so that we feel less obligated to do as much for the next generation. Indeed, considering the finding that the succeeding generation believed it was fair to receive more resources from the prior generation than the prior generation judged as fair to give (Wade-Benzoni et al., 2008) in conjunction with the phenomenon of intergenerational reciprocity (Wade-Benzoni, 2002a), we can expect the succeeding generation to feel unfairly treated by prior generations (despite prior generations' own beliefs that they were fair in their allocations) and thus reciprocate forward to future generations by allocating fewer resources to them as a result of this perception of unfairness.

Finally, it would be interesting to explore the potential existence of an interaction between intertemporal distance and intergenerational reciprocity. Does greater intertemporal distance diminish the modeling role of previous generations? Or does the modeling effect of previous generations' behavior gain in import and stature as intertemporal distance increases? We suggest that the relationship between intergenerational reciprocity and intertemporal distance may be dependent on intergenerational identification. If intergenerational identification is high, then greater intertemporal distance may

enhance the meaning and power of the previous generation's behaviors for future actors. When individuals identify highly with a group, they tend to place a high level of significance on the values of the group and the symbolic meaning of their group membership (Dutton, Dukerich, & Harquail, 1994). In such circumstances, the founding generation of an intergenerational group may be endowed with a special symbolic importance, as when U.S. citizens discuss the "Founding Fathers" as symbols of American values. Therefore, the behavior of more distant generations may be associated with a valorized history of the group and may therefore have a particularly powerful effect on the behavior of individuals who have a high level of intergenerational identification with the group. However, if intergenerational identification is low, then intertemporal distance may dilute the perceived relevance of past generations' behaviors. Further research should explore these possibilities.

#### Uncertainty, Power, and Social Responsibility

Research on intergenerational dilemmas indicates that fairness judgments in intergenerational allocation decisions depend not only on individuals' position in the intergenerational sequence (i.e., whether they are in the preceding or succeeding generation) but also on the amount of uncertainty about the effect of the preceding generation's decisions on the succeeding one. Outcome uncertainty about the future consequences of intergenerational decisions emerges from the intertemporal dimension of intergenerational contexts and is an important factor that influences egocentrism in intergenerational allocations. Decisions concerning the future inevitably involve outcome uncertainty, partly due to the actual number of possible events that can happen over time to prevent the occurrence of expected consequences, and partly due to individuals' limited knowledge about the future (Jungermann & Fleischer, 1988). Future consequences of intergenerationally relevant decisions, such as the effects of global warming, are often not well determined or even knowable. It may be uncertain whether a negative consequence will ever occur or whether future technology for decreasing or mitigating the effect of the consequences will be available if negative consequences do in fact materialize (Svenson, 1991).

Findings from a series of experiments suggested that the nature of outcome uncertainty is critical in intergenerational contexts (Wade-Benzoni et al., 2008). Specifically, recent findings suggest that it is not just a matter of how much future generations will benefit but whether or not they will benefit at all as a result of the sacrifices of present generations. In these studies, it was only when outcome uncertainty about the consequences of the present

decision to future others included the possibility that future generations may receive no benefits that uncertainty affected decisions. When the future generation was guaranteed some benefit, but the extent of that benefit remained uncertain, uncertainty did not affect decisions. The authors speculated that the stark possibility of future generations receiving nothing at all compelled people to think more seriously about the implications of intergenerational decisions. Although further research should seek to replicate these findings, the implications of these effects are considerable. In real-life intergenerational decisions—especially those involving resource allocations—a key aspect of intergenerational justice is preserving options and possibilities for future generations. In cases involving renewable resources (e.g., fisheries), the resource has the possibility of replenishing itself as long as it is not wiped out completely. The findings from these studies suggest that, although the possibility of the complete elimination of the resource may encourage intergenerational beneficence, when the possible outcomes of present decisions exclude this extreme result, outcome uncertainty may have little effect on intergenerational decisions.

It is interesting that this finding from research on intergenerational dilemmas reveals that outcome uncertainty about how future generations will be affected by the actions of present generations plays an unexpected role in intergenerational decisions. Previous research on the effect of uncertainty on self-interest suggests that uncertainty about the consequences of decisions and behaviors enables people to rationalize engaging in more self-interested behavior as opposed to behavior that is more normatively or ethically justifiable (Budescu, Rapoport, & Suleiman, 1990; Ferris, Russ, & Fandt, 1989; Hsee, 1995; Loewenstein, 1996; Mannix & Loewenstein, 1993; Ralston, 1985; Tenbrunsel, 1998). In other words, uncertainty promotes more egocentric tendencies. In the intergenerational context, therefore, one might expect that outcome uncertainty would give earlier generations an excuse to choose outcomes that favor themselves because they can reason that future events may turn out better than predicted. That is, present decision makers may be able to maintain optimistic biases about how the world will be in the future because there would not yet be any data available to disconfirm their beliefs. Based on this reasoning, we might thus expect greater outcome uncertainty to enable the preceding generation to justify keeping more resources for themselves.

Research on intergenerational dilemmas, however, has revealed a different effect: When the outcome uncertainty implies a possibility that future others may receive nothing, outcome uncertainty enhances intergenerational beneficence. Research has further indicated that

this effect may emerge because this type of outcome uncertainty increases decision makers' concerns about social responsibility (Wade-Benzoni et al., 2008), which counterbalance self-interest. Whereas high uncertainty might be expected to provide more leeway for egocentric behavior by enabling people to justify allocating more resources to themselves, it also allows for greater potential effect on subsequent generations and thus adds non-trivially to moral reasoning when intergenerational allocation decisions are made. Wade-Benzoni et al. (2008) posit that greater levels of uncertainty about the effect of one's decisions on future others can instill an enhanced sense of power in the present generation. Although power can lead people to behave in more self-interested ways, the high power asymmetry that characterizes intergenerational contexts can lead to a greater sense of responsibility to the powerless others who are affected by one's decisions.

### *Power*

Power asymmetry is a prominent characteristic of intergenerational contexts that contributes substantially to the psychological dynamics of intergenerational decisions (Wade-Benzoni, 2002a, 2003, 2006a; Wade-Benzoni et al., 2008). Earlier generations have most or all of the control over how resources will be allocated to subsequent generations; this feature goes hand-in-hand with the fact that later generations do not generally have the opportunity to directly reciprocate the behavior of previous generations (Wade-Benzoni, 1999, 2002a). Power asymmetry is even more dramatic when consequences increase over time—a feature captured in most of the experiments in the research on intergenerational decisions reviewed here. In such cases, the parties who have control over the decision process (present generation) are not the parties with the most at stake (future generations), and thus the dependency of future generations on the present generation is intensified.

In contexts in which joint decisions are required (such as negotiations, for example, where much research on power has been done), participants share responsibility for the outcomes. As a consequence, people expect the other parties to exert and defend their own interests. In contrast, in intergenerational dilemmas, the recipients of resources do not have a voice in the allocation decision and thus the allocator holds singular responsibility for the outcomes to others. This type of power asymmetry might lead one to believe that present decision makers would be inclined to use their power to serve their own interests. This reasoning would be supported by research indicating that powerholders tend to be more aggressive than others in goal pursuit (Magee, Galinsky, & Gruenfeld, 2007; Overbeck & Park, 2001, 2006),

powerholders tend to act in self-interested ways with respect to person perception (Georgeson & Harris, 1998, 2000; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Goodwin, Operario, & Fiske, 1998; Kipnis, 1972, 2001; Sachdev & Bourhis, 1985), powerholders exhibit greater egocentric biases with respect to ideological evaluation (Keltner & Robinson, 1996, 1997), powerholders exhibit increased sensitivity to rewards and punishments (Anderson & Berdahl, 2002; Keltner, Gruenfeld, & Anderson, 2003), and priming power reduces perspective taking (Galinsky, Magee, Inesi, & Gruenfeld, 2006) and leads individuals with exchange orientation to pursue their self-interest (Chen, Lee-Chai, & Bargh, 2001). Furthermore, Samuelson and Allison (1994) found that powerful individuals who were labeled as supervisors were more likely to take more than their fair share of a common resource, although this relationship did not emerge for powerful individuals who were labeled as leaders or guides. They interpreted these results as indicating that the label *supervisor* entails greater feelings of entitlement than do the other two labels. Subsequent research supported, however, the greater tendency toward self-interests for powerholders labeled as leaders as well and demonstrated that this tendency is mediated by feelings of entitlement (De Cremer, 2003; De Cremer & van Dijk, 2005; van Dijk & De Cremer, 2006). Thus, a considerable amount of previous work indicates that powerholders tend to pursue their own self-interest.

On the other hand, research has also demonstrated that power asymmetry can change the psychology of decisions in ways that lead the decision maker to be more focused on the interests of others. Research on dictator games, a paradigm used by experimental economists in which decision makers have unilateral choice about the outcomes to themselves and others (e.g., Bolton, Katok, & Zwick, 1998; Forsythe, Horowitz, Savin, & Sefton, 1994; Hoffman, McCabe, & Smith, 1996), shows that power imbalance can induce feelings of social responsibility and those feelings can heighten people's motivations to help others who are in a powerless position (Berkowitz, 1972; Chen et al., 2001; Greenberg, 1978; Handgraaf, van Dijk, Vermunt, Wilke, & De Dreu, 2008; Overbeck & Park, 2001). When allocators are confronted with weak recipients, they assess the decision as strategic and competitive and act in aggressive ways toward the recipient (Baumeister, Smart, & Boden, 1996; De Dreu & van Knippenberg, 2005; Suleiman, 1996). If the recipient is completely powerless and cannot retaliate in any way, however, a social responsibility norm can emerge, and prosocial considerations become more influential in the decision-making process (Handgraaf et al., 2008). These findings underscore that people's concerns about justice are not inevitably driven by self-interest motives (e.g.,

Holmes, Miller, & Lerner, 2002; Lerner, 1977; Lerner & Miller, 1978). Lerner (2001, 2003) proposes that being placed in a position of power may lead people to consider the moral implications of their actions through an intuitive process based on an immediate sense of right and wrong rather than through a conventional application of normative rules that favor self-interest. In fact, in situations in which people are confronted with matters of serious consequence and they face actual or even merely threatened injustice, they will act on an intuitive sense of justice with neither the need for reasoned justification nor consideration of resultant detrimental personal consequences (Lerner, 2003).

Given the extreme power imbalance between present decision makers and future others, intergenerational dilemmas represent another context in which the traditional assumption that power corrupts may not hold, and instead power may produce social responsibility motivations. Recent research supports the notion that power elicits social responsibility concerns in intergenerational dilemmas. Wade-Benzoni et al. (2008) found that priming the present generation with power, similar to the effect of high levels of outcome uncertainty (i.e., levels of outcome uncertainty that include the possibility of complete resource depletion), led to greater feelings of social responsibility and concern for the outcomes to future generations—once again tempering the effect of egocentrism on self-interest and consequently increasing generosity toward future generations.

Specifically, Wade-Benzoni et al. (2008) found that when present decision makers were primed with power, the level of uncertainty had little effect on participants' feelings of social responsibility, such that participants in both high uncertainty and low uncertainty conditions felt a relatively high level of responsibility for the outcomes of others. When, however, present decision makers were not primed with power (i.e., in control conditions), high levels of uncertainty produced feelings of social responsibility roughly equivalent to the levels experienced by power-primed individuals, whereas individuals in the low uncertainty conditions reported significantly lower feelings of social responsibility. It may therefore be the case that the level of uncertainty inherent in an intergenerational dilemma can influence the power felt by the present decision maker and consequently have a critical effect on the decision. When uncertainty is high, such that the possible benefits that future generations could receive from a present decision vary dramatically and include the possibility that they may receive nothing, individuals may feel an enhanced experience of power, and this power can motivate feelings of social responsibility. When, however, uncertainty is less extreme, present decision makers experience less of the psychological effect of their power

and therefore tend to engage in a greater degree of self-interested behavior.

*Loosening the Boundary Condition of Absolute Power for the Present Decision Maker*

These findings concerning the critical and counterintuitive role that power can play in intergenerational decisions indicate that the role of power in intergenerational dilemmas merits further exploration. Specifically, the boundary conditions that have characterized previous research on intergenerational dilemmas—that present decision makers have complete power over present decisions and are subsequently removed from the exchange context so that they do not experience the future effect of their choices—establish intergenerational contexts as contexts in which present decision makers have absolute and unaccountable power. In this sense, intergenerational dilemmas can be viewed as dictator games with temporal delays. This observation has prompted us to explore what might be the effects of loosening the boundary conditions that endow present decision makers with absolute power over their decisions and outcomes (for a more extensive discussion of the potential for loosening the boundary conditions in intergenerational research, see Tost, Hernandez, & Wade-Benzoni, 2008). In this section, we first consider the potential effects of the existence of third parties on intergenerational decisions and attempt to determine the possible ramifications of other interests competing for the decision maker's attention. We then consider the utility of viewing intergenerational dilemmas as two-level games in which decision makers not only must determine their own opinion as to the appropriate course of action but must further negotiate with their contemporaries to achieve consensus or cooperation to pursue a course of action.

*Additional constituencies.* As explained above, research has shown that the effect of social power on social responsibility is dependent on the extent of power asymmetry such that there is a positive relationship between power and self-interested behavior up to the point that power becomes absolute; when power is absolute, social responsibility concerns are activated (Handgraaf et al., 2008; Wade-Benzoni et al., 2008). Of course, additional empirical work is needed to replicate these effects. Given what previous research has already demonstrated, however, an interesting extension to this line of research would be to consider the effect of the existence of additional constituencies on powerholders' interpretations of the appropriate targets of their responsibility. Here, we take additional constituencies to mean an individual or group that is not actively involved

in the decision but whose interests the decision maker might view as relevant to the decision outcome. We suggest that third parties could have negative effects on intergenerational beneficence by diverting the decision maker's attention and feelings of responsibility away from future others.

When a decision maker perceives that the interests of other constituencies may also be at stake in an intergenerational decision, the decision maker's view of the appropriate target of social responsibility motivations may be affected. For example, managers making intergenerational decisions in organizations are often acting as agents of the organization rather than as independent and unitary actors. In these types of situations, the manager may have complete power over the present decision and, thus, also over the outcomes to future generations, but the manager also likely feels responsible to the organization for organizational performance. In some cases, the interests of the organization and future others may be aligned. In other cases, however, when the interests of the organization and future others compete with each other, then it is unclear what would be the effect of the manager's feelings of social responsibility: Would the experience of complete power activate feelings of social responsibility to the future powerless others or instead to the organization to whom the decision maker feels ultimately accountable? This question not only directs researchers' attention to an important organizational issue, but it also highlights an aspect of the relationship between complete power asymmetry and social responsibility to which extant research cannot speak: Is it the complete power of the powerholder or the complete powerlessness of future others that inspires the motivations toward social responsibility? If it is the latter, then the presence of additional constituencies should not detract the decision maker from acting in the interests of powerless future others. If, however, it is the former, then the decision maker might end up feeling a greater responsibility toward the source of his or her power than to the powerless others whose outcomes will be affected by the decision.

*Intergenerational dilemmas as two-level games.* Two-level games are mixed-motive forms of social interaction in which outcomes are determined through two separate rounds of negotiation or decision making. In research in the field of political science, two-level games are a common metaphor for the interplay between domestic politics and international diplomacy (Putnam, 1988). As used in that context, two-level games involve a negotiator reaching an agreement at the international level (the first level of the game) that must then be ratified at the domestic level (the second level of the game). Because the agreement must be ratified by the domestic constituency, the

preferences of domestic actors constrain the range of options available to the negotiator at the international level. Negotiations between unions and management are characterized by a similar dynamic, in which the union representatives must have any potential agreement ratified by the broader union membership.

This metaphor is particularly useful for intergenerational decision making when the intergenerational dilemma requires collective action on the part of the present generation rather than merely requiring action by a single individual decision maker. Specifically, if a present actor is faced with an intergenerational dilemma that requires collective action on the part of the present generation, then that intergenerational dilemma can be viewed as a two-level game in which the actor first forms a personal preference for the course of action to be taken and then faces a negotiation within his or her own generation. The first level of the two-level intergenerational dilemma thus consists of an intergenerational dilemma in which the present actor forms a preference for the allocation of resources between the present generation and others in the future. The second level then involves an intragenerational negotiation to determine the course of collective action. The necessity of collective, rather than individual, action at the second level means that the collective desires of the present generation can limit the tactics available to the actor in the first stage of the two-level game in two possible ways.

First, to proceed on a particular course of action, the individual will have to persuade a sufficient number of contemporaries that the course of action is appropriate. In this type of case, the courses of action available to the individual to achieve the desired allocation of resources across generations are limited by the extent to which the individual can persuade his or her contemporaries to support those courses of action. If a particular course of action cannot garner sufficient support, an alternative approach will need to be identified.

Second, the second stage of the game may limit the range of actions available to the individual if the dilemma at the collective level takes the form of a step-level game (Van de Kragt, Orbell, & Dawes, 1983), which is a particular type of social dilemma. As pointed out previously, a social dilemma is a collective decision situation in which each individual can experience personal benefit by acting selfishly, regardless of the behavior of other group members, but all group members are worse off if everyone behaves selfishly than if everyone cooperates. A step-level game is a game that occurs when a group of individuals is engaged in a public goods dilemma in which each individual is asked to contribute from his or her private resources to provide a public good. If the collective contribution exceeds a sufficient level, then everyone benefits. If the collective contribution does not

reach this level, then the collective level benefit is not realized. In an intragenerational social dilemma, a decision maker in the present generation might want to act on the behalf of future generations, but the potential effect of any individual-level action might depend on others within the same generation also making decisions on the behalf of future generations. In these cases, the dilemma is that if the individual sacrifices and no one else does, then the individual foregoes self-interest but the future generation still does not benefit. In this kind of situation, the cooperation of many actors in the present generation is needed to benefit future generations.

One familiar example of a two-level dilemma involving both an intergenerational dilemma at the first level and a step-level game at the second level concerns the consumption of fossil fuels. Individuals are often faced with the dilemma of whether to go to the trouble of reducing their consumption of fossil fuels to conserve resources for future generations, either by reducing the amount of energy that they use or by switching to other energy sources. This is an intergenerational dilemma because it represents a situation in which a present actor must make a decision that will determine outcomes for future others. If only one or very few members of the present generation reduce their consumption of fossil fuels, however, then their effort will likely have little effect. It is only when a considerable portion of the present generation cooperates to reduce consumption that a significant effect can be achieved. Thus, as present individuals make their individual decisions of whether or not to reduce their personal levels of fossil fuel consumption, they are participating in an intragenerational step-level game in which everyone is better off from a self-interested perspective if they neglect to reduce their consumption, but if a sufficient level of collective reduction is not achieved, then it will be impossible to provide any meaningful benefit to future others. Thus, fossil fuel consumption presents a two-level intergenerational dilemma in which present individuals are dependent on intragenerational cooperation to achieve an intergenerational goal.

One implication of expanding the view of intergenerational dilemmas to include situations in which the present decision maker is not a unitary actor with absolute power over the decision is that the need to inspire collective action among contemporaries is likely to make intergenerational beneficence more difficult and, as a consequence, less likely. Specifically, intergenerational beneficence may be more difficult if other individuals in the present generation are more inclined toward self-interest or if members of the present generation are inclined toward intergenerational beneficence but do not trust others in their generation to cooperate.

Research on group-level and two-level social dilemmas can shed light on these issues and indicates that

these concerns for the prospects of intergenerational beneficence are at least somewhat well founded. Group-level social dilemmas involve situations in which groups, rather than individuals, are the primary actors in social dilemmas. Research in this area has demonstrated that when people act as individuals in social decision-making contexts, they tend to be far more generous and cooperative than when they act as groups (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990). Similarly, research on two-level social dilemmas, situations in which individuals face a social dilemma within their group while a simultaneous social dilemma exists between groups (Dawes & Messick, 2000), has found that individuals act vigorously to protect the interests of their own groups, even when those groups are randomly constructed (Bornstein, 1992). These findings indicate that group members encourage one another to pursue more self-interested actions. If this is so, then in two-level intergenerational dilemmas, members of the present generation may attempt to persuade one another to forego beneficence and serve their own self-interests.

Research in the area of egocentric biases reinforces this reasoning. Specifically, scholars have demonstrated that egocentrism exists not only at the individual level but at the group level as well and that individuals may justify selfish behavior by arguing that they were acting on behalf of their group (Diekmann, 1997; Diekmann et al., 1997). For example, Diekmann (1997) conducted an experiment in which individuals engaged in a production task either within a group or on their own. Individuals were then provided with feedback indicating their relative performance or the relative performance of their group as compared with another individual or group with whom they would share payment for the task. The performance feedback was ambiguous and open to interpretation. Diekmann found that individuals who worked alone claimed more than half of the payment for themselves when their claims were to be private but claimed less than half when told that their claims would be made public. Individuals who worked in groups, on the other hand, independently decided to keep more than half for the group in both public and private conditions. Furthermore, individuals allocating to their groups rated advantageous inequality as significantly fairer than did individuals allocating to themselves alone. Diekmann interpreted these results to indicate that individuals use beneficence toward other ingroup members as an excuse to act unfairly toward outgroup members. In these situations, the beneficence enacted toward ingroup members acts as a mask, obscuring the self-interested motivations that the action also serves (cf. Batson, 1991, 1995). Therefore, when intergenerational dilemmas contain an intragenerational component, decision makers may construe the decision

as an opportunity to demonstrate loyalty to their own generation rather than as an opportunity to demonstrate beneficence to future others. If this is the case, intergenerational beneficence may diminish.

Other research in the area of social dilemmas, however, provides reason for more optimism about the prospects for intergenerational beneficence. For example, Kramer and Brewer (1986) found that when participants engaged in a depleting resource dilemma, individuals tended to restrain their harvesting activities if informed that members of their ingroup were harvesting too rapidly. This restraint was ostensibly enacted in an attempt to compensate for the behavior of other ingroup members by harvesting less and suggests that there are some circumstances in which group membership may contribute to, rather than detract from, intergenerational beneficence. Although Kramer and Brewer's (1986) participants also had a self-interested stake in preserving the common resource, this is not the only study that indicates that individual group members are motivated to compensate for group-level shortcomings. For example, Barry and Tyler (in press) demonstrate that individuals appear to perceive group-level unfairness as a group shortcoming and subsequently engage in prosocial behavior that might mitigate that unfairness. Therefore, further research should explore the circumstances under which the need for intragenerational cooperation in intergenerational dilemmas will inhibit or enhance intergenerational beneficence, as well as the extent to which members of the present generation are more likely to encourage one another toward self-interest rather than to set an example of restraint and cooperation.

Finally, we suggest that when intergenerational dilemmas require cooperative action from other members of the present generation, power asymmetries among present actors may become more critical because powerful actors may be the only ones with the influence and resources to persuade other members of their generation to cooperate toward intergenerational beneficence. At the same time, if powerful actors prefer to act in their own self-interest, less powerful actors may feel that it is futile to attempt beneficence because the more powerful actors who could have a larger effect are refusing to cooperate. For instance, consider a real-life intergenerational dilemma facing companies in the fisheries industry. Stocks of many species of fish are near collapse, and harvesting must be curtailed considerably to maintain sustainable levels of fish for future generations. Individual companies within this industry must cooperate with one another to curtail harvests if they are to be successful. Thus, according to the logic presented here, it is likely that the largest fishing companies (i.e., those who are contributing most to the depletion by harvesting the greatest amounts of metric tons) set the course that the

entire industry is likely to follow. If the largest companies refuse to curtail their harvests, small operations are unlikely to do so, reasoning that fish populations will be depleted regardless of their behavior. However, if the largest actors take responsibility to set a positive example of restraint and use their influence to persuade others in their industry to exercise restraint as well, the prospects for achieving sustainability can be expected to be higher. Thus, further research could also explore the effect of power asymmetry within the present generation, as well as the effect of powerful actors' behaviors, on the likelihood of intergenerational beneficence.

### Generativity and Immortality Striving

Prior theory and research dealing with intergenerational behavior has focused on the construct of *generativity*, a term first coined by eminent psychoanalyst Erik Erikson. Whereas Erikson (1950) defined generativity as "the concern in establishing and guiding the next generation," psychologists have since developed it into an even richer construct. Generativity is understood by contemporary scholars as the desire to invest one's substance in forms of life and work that will outlive the self (Kotre, 1984) or, more specifically, as concern for and commitment to the well-being of future generations (McAdams & de St. Aubin, 1992). In the long middle of the human life course, adults make important contributions to their families, communities, organizations, societies, and cultures as they seek to contribute in positive ways to the world and the people they will leave behind (de St. Aubin, McAdams, & Kim, 2004).

Naturally, generativity may be expressed in bearing and raising children. Parents are actively involved in providing for the next generation as epitomized in their own offspring. It is by no means, however, limited to the domain of parenthood. The generative adult may operate on a larger scale in a wide variety of contexts, including work and professional activities, volunteer endeavors, and community activism (McAdams & de St. Aubin, 1992). Generativity can be expressed through teaching, mentoring, leadership, charitable activities, religious involvements, political activities, and a host of other behaviors aimed at having a lasting positive effect on others (McAdams & de St. Aubin, 1992). Research has demonstrated that the strength of generativity differs across individuals (see de St. Aubin et al., 2004), and these differences predict a range of prosocial behaviors (Rossi, 2001).

Scholars in the domain of generativity note that all its variants are driven by a basic human desire to be part of the larger progression of life, to leave the world a little better off for our presence in it, and to feel as though one has mattered. In other words, generativity is driven

by a desire for a sense of meaning in one's life. Extensive research has demonstrated that people desire personal meaning in their lives (Heine, Proulx, & Vohs, 2006; Keyes, Shmotkin, & Ryff, 2002; McGregor & Little, 1998; Ryff & Keyes, 1995; Steger, Kashdan, Sullivan, & Lorentz, 2008; Zika & Chamberlain, 1992). For example, in an administration of the General Social Survey, Americans indicated that meaningful work is the job feature that they most value (Cascio, 2003). Research has also demonstrated that when people do not feel a sense of meaning in their lives, they search for it (Heine et al., 2006; Steger, Frazier, Oishi, & Kaler, 2006).

Meaning is defined differently by various researchers, and perhaps because of the inherent tautology, the meaning of *meaning* remains unclear. Some have defined meaning as goal directedness or purposefulness (Ryff & Singer, 1998), whereas others have focused on coherence in one's life (Battista & Almond, 1973) as the key aspect of life meaning. Bringing multiple views together, Reker and Wong (1988) define meaning as "the cognizance of order, coherence, and purpose in one's existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment" (p. 221). However, Heine and colleagues (2006) take a step back to remind us that "meaning is relation" (p. 89). They argue that meaning is "what links people, places, objects, and ideas to one another in expected and predictable ways" (p. 89). Building on this conceptualization of meaning, we conceive of personal life meaning as a set of linkages between one's existence and something external to the self, such as other individuals, institutions, or value systems. We therefore argue that it is through the pursuit of these linkages that individuals pursue personal life meaning.

Inexorably tied to this drive for meaning is the fact that we die (Kotre, 1999). Psychological research suggests that death awareness occupies a critical role in the meaning-making process (Grant & Wade-Benzoni, forthcoming). Cultural anthropologists and psychologists have described the unique paradox of the human condition as one that stems from the juxtaposition of our survival instinct, which we share with all forms of life, and our awareness of the inevitability of our own deaths, which differentiates us from other organisms (e.g., Becker, 1973, 1975; Greenberg, Pyszczynski, & Solomon, 1986; Solomon, Greenberg, & Pyszczynski, 1991). Our strong drive for self-preservation, coupled with the knowledge of the certainty of our own eventual deaths, creates an existential dilemma, which causes the potential for incapacitating anxiety. It is fortunate that in addition to the awareness of the inevitability of our deaths, we also have the capacity to develop cognitive mechanisms to buffer ourselves from the negative emotions those thoughts cause.

Concerns of death and their associated defensive responses are a mainspring of human activity, but even more than death itself, people fear death with insignificance (Becker, 1973). We want to know that our lives have somehow counted, if not for ourselves, then at least in the larger scheme of things. People strive to transcend death by finding expansive meaning for their lives, and central to this meaning is that the effects of one's existence persist into the future (Becker, 1973, 1975; Kotre, 1984, 1999). Generative behaviors represent the ways in which people achieve unity with an enduring future that extends beyond themselves (Kotre, 1984). Various forms of generative action are thus, at their core, an expression of the will to live, the burning desire to count, and the quest to make a difference because one has lived (Kotre, 1999; Levinson, 1978).

Striving to defy death by extending oneself into the future can be quite literal, such as when people "live on" genetically through their children or spiritually by believing in an afterlife. A significant and common manifestation of generativity, however, is through symbolic immortality striving pursuits (Becker, 1973; Kotre, 1984; McAdams, 1985). Although such activities can be focused on, and result in, leaving a positive personal legacy of the self for the future (such as when one creates a work of art or writes a book), symbolic immortality striving can also play out in subtler and more incremental forms, such as simply improving the circumstances for another person in the future (Wade-Benzoni, Tost, Hernandez, & Larrick, 2009). Acts that leave a trace on the future and affect others can tap into the psychological dynamics of generativity and serve as an outlet for immortality striving.

Generative behaviors help people to buffer death anxiety by enabling them to connect themselves to a living future, but such activities do not eliminate the fear of death nor do they enable people to achieve the goal of actual immortality. For most people, buffering death anxiety is a continuous, ongoing quest that is accomplished to varying degrees by different activities and becomes more or less imperative under different circumstances. Most notable, research indicates that symbolic immortality striving needs are intensified when mortality is salient (e.g., Greenberg et al., 1986; Solomon et al., 1991). This finding has wide-reaching implications, given that constant reminders of our mortality are a regular part of human life. The consumption of any form of news media, for example, often exposes people to images of death.

Terror Management Theory (TMT), a psychological theory related to but separate from generativity based theory, offers substantial support for the notion that a broad range of seemingly unrelated forms of thought, attitudes, and behavior are rooted in the human need to

resist the notion that physical death is the end of individual existence. According to TMT, people can gain psychological security in the face of death anxiety by feeling a part of something larger, more powerful, and more eternal than themselves, such as family, church, nation, or corporation (Pyszczynski, Greenberg, & Solomon, 1999). Cultural conceptions of reality offered by such enduring social entities help to provide people with protection from the most basic of human fears (i.e., death) by imbuing life with a sense of order, permanence, and stability (Pyszczynski et al., 1999). After being reminded of their mortality, people exhibit symbolic immortality striving by identifying more closely with such entities and becoming more defensive of the worldviews (i.e., values and beliefs) embodied by them (Arndt, Greenberg, Pyszczynski, Solomon, & Simon, 1997; Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997; Simon et al., 1997).

Consistent with these perspectives, theory on intergenerational dilemmas has emphasized that intergenerational beneficence can function as a form of symbolic self-extension, in particular when people experience some level of death awareness (Wade-Benzoni, 2002b, 2006b). Whereas the literature on generativity has pointed to death as an underlying impetus for generative action, and TMT has demonstrated that mortality salience leads to various forms of symbolic immortality striving, research on intergenerational dilemmas brings together insights from these two lines of work and offers theoretical grounding and empirical support for the notion that mortality salience promotes intergenerational beneficence (Wade-Benzoni et al., 2009). The role of legacy creation is a critical component of these effects.

### *Legacies*

A legacy is an enduring meaning attached to one's identity. When an individual leaves a legacy, that individual has established an effect that lasts beyond his or her living existence on this planet. In this sense, legacies are vehicles for personal life meaning that extend into the future. Therefore, to understand the ways in which legacies function in intergenerational dilemmas, it is necessary to understand the concept of personal life meaning in more detail.

As previously explained, we define personal life meaning as the relationship or set of relationships that one perceives that one's life stands for. These relationships may include linkages among one's personal existence and (a) the existence or experience of other individuals or (b) values, value systems, or cultural worldviews. We further argue that these two types of linkages serve either communal or agentic needs, respectively. The terms *agency* and *communion* were initially used by Bakan (1966)

to describe two fundamental modalities in the existence of life-forms. For Bakan, agency refers to the existence of an organism as an individual and is manifested in self-assertion, self-expansion, and self-protection, whereas communion refers to the participation of the organism in some larger group or collectivity and is manifested in a sense of oneness with others.

In the domain of meaning, we argue that an agentic component to personal life meaning is pursued through attempts to link oneself to values or cultural worldviews through achievement. That is, one aspect of personal life meaning involves linking oneself to a value system by pursuing achievements that embody that value system. For those who value aesthetic beauty, this type of meaning might be pursued through attempts to achieve renown as a painter, photographer, or writer. For those who most highly value technical mastery, agentic meaning may be garnered through the achievement of a breakthrough scientific discovery or the invention of an influential technological device. Thus, agentic personal life meaning is about linking one's identity with one's values through achievement. The communal dimension of personal life meaning, on the other hand, is pursued through attempts to link oneself with valued others through affiliation. Individuals might pursue communal personal life meaning by affiliating themselves with groups or clubs that connect them with others who share their beliefs and values or by joining institutions of work, education, or worship that bring them together with valued others. The communal domain of personal life meaning is, therefore, about establishing a link between one's identity and valued others through affiliation.

Research on the effects of mortality salience has demonstrated that mortality salience provokes both achievement-oriented and affiliation-oriented responses. With regard to achievement, the self-esteem bolstering responses demonstrated in TMT research represent participants' attempts to connect themselves to enduring values through achievement. Participants in these experiments have dealt with mortality salience by attempting to embody their values by accomplishing feats that are representative of those values. For example, mortality salience enhances tolerant behavior in liberals but not conservatives (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992), increases risky driving behavior among those who value their driving ability as a source of self-esteem (Ben-Ari, Florian, & Mikulincer, 1999), and increases intentions to exercise among individuals for whom fitness is an important dimension of self-worth (Arndt, Schimel, & Goldenberg, 2003). Mortality salience has also been demonstrated to increase materialism among Americans (Arndt, Solomon, Kasser, & Sheldon, 2004; Kasser & Sheldon, 2000). Although these values are sometimes widely held culturally normative values,

it is important to note that TMT theorists have acknowledged that people adhere to their own unique and individualized set of standards and values that they cull from the wide variety of cultural values to which they are exposed over their lifetimes. Indeed, studies have demonstrated that the effects of mortality salience depend on the content of the individual's worldview (e.g., Greenberg et al., 1992). Thus, previous research has demonstrated that a common response to mortality salience is to attempt to embody one's personal values through achievement.

Research has also demonstrated that the desire to affiliate with others is a fundamental human motivation (Baumeister & Leary, 1995; Leary, Tambor, Terdal, & Downs, 1995) and a frequent response to the experience of mortality salience. For example, studies have demonstrated that individuals become increasingly biased in favor of their ingroup following mortality salience manipulations (Arndt et al., 2004). Participants have also responded to mortality salience by reporting increased liking for essayists favoring their culture and increased derogation of essayists opposing their cultural values (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Furthermore, Wiseman and Koole (2003) found that mortality salience led individuals to seek to affiliate with others even if those others threatened the individuals' worldview. In fact, they found that participants in mortality salience conditions desired to affiliate with others even if such affiliation required them to attack their own worldviews. Thus, evidence indicates that a key reaction to mortality salience is to attempt to engage in affiliation with others.

We argue that individuals seek to establish legacies that fulfill their agentic needs by linking their personal identity with their values through achievements and that fulfill their communal needs by linking their personal identity with valued others through affiliation. Of course, the notion of a legacy is a concept that is the most meaningful when a person's behavior has implications for other people in the future. The enduring effect of one's behavior over time is central to creating a legacy. One cannot create a legacy by having a fleeting effect or by affecting merely one's own future self. Although any kind of other-oriented behavior has the potential to help people to feel as though they have "made a difference," intergenerational beneficence is particularly effective for legacy creation because the temporal aspect increases the feeling that one's effect will endure over time (Wade-Benzoni, 2002b, 2006b). Thus, intergenerational beneficence allows decision makers an opportunity to achieve an effect that affiliates them with others while also extending this meaning through time in the form of a legacy.

In support of this reasoning, in a recent series of experiments, Wade-Benzoni et al. (2009) found that

mortality salience in essence reversed the direction in which time delay between decisions and consequences affected other-oriented behavior in the allocation of beneficial resources. Specifically, under normal (i.e., control) conditions, people were more generous to contemporary others relative to future others—presumably reflecting standard time discounting. In contrast, when primed with death, people were more generous to future others relative to contemporary others. Thus, this research reveals an interaction between mortality salience and recipient (present vs. future other) such that mortality salience increases generosity in the allocation of beneficial resources to others in the future but reduces generosity in the allocation of beneficial resources to others in the present. This pattern of allocations supports the theorizing that acting on the behalf of future others helps to fulfill symbolic immortality needs and correspondingly buffers death anxiety, whereas acting on the behalf of contemporary others does not appear to do so.

Traditional theories of intertemporal choice imply that individuals would be less willing to give up a benefit on the behalf of future others than contemporary others due to the role of time discounting. The research on intergenerational dilemmas suggests, however, that under conditions of mortality salience, the temporal aspect of intergenerational contexts can help promote future, other-oriented behavior rather than hinder it. We suggest that mortality salience may promote behaviors that are fundamentally driven by the survival instinct when individuals are allocating to either present or future others but that the actual manifestation of survival instincts varies between the two contexts. Acting on behalf of future others allows people to symbolically extend themselves into the future through their impact; thus, survival paradoxically takes the form of helping others. In contrast, acting on the behalf of contemporary others does not as readily offer the benefit of symbolic self-extension. In those cases, mortality salience may instead cause people to focus more on literal self-protection, manifested in the allocation of more beneficial resources to themselves in the present.

An interesting potential extension to this research would be to explore in more depth the effects of intertemporal distance on intergenerational beneficence under conditions of mortality salience. The research summarized above suggests that mortality salience reverses the traditional effect of time discounting (i.e., time delay as a barrier to saving resources for future consumption). When mortality is salient, time delay appears to increase, rather than decrease, allocations of resources to future others. This finding raises an important question: Does the size of this effect depend on the extent of time delay (i.e., the amount of intertemporal distance)? Would mortality salience enhance beneficence to future others

for longer time delays to a greater extent than for shorter ones? Research on temporal construal provides reasons to expect that this might be the case.

Research on temporal construal examines how time delay affects the ways that people construe decision-relevant information. This research has demonstrated that events which are construed at a greater intertemporal distance are construed at a higher level. High-level construal is characterized by a focus on general, goal-relevant aspects of the target that are construed as simple, coherent, and abstract (Lieberman, Sagristano, & Trope, 2002; Liberman & Trope, 1998; Trope & Liberman, 2000, 2003). When conducting high-level mental construal, individuals focus on aspects of future events that are related to superordinate concerns and are central to the meaning of the event for them. Low-level construal, on the other hand, is characterized by a focus on specific, goal-irrelevant aspects of the target that are construed as contextualized, incidental features (Lieberman et al., 2002; Liberman & Trope, 1998; Trope & Liberman, 2000, 2003). When conducting low-level mental construal, individuals focus on aspects of future events that are related to subordinate concerns, concerns that ultimately reflect insignificant details rather than the crux of the issue at hand. Research has demonstrated that high-level construal is associated with concerns about desirability, whereas low-level construal is associated with concerns about feasibility (Lieberman & Trope, 1998).

For example, if a student discovers that an interesting lecture on a topic of great interest to her is to be delivered on her campus in 3 months, she is likely to place a high priority on attending the event and will likely look forward to it. However, when the event is only days away, she may feel inclined to skip the event because of the time it will take to walk across campus to attend the talk, or she may feel that she needs to save the time to focus on her classes. In this example, when the event is 3 months away, she construes the event at a high level, focusing on issues concerning the desirability of attending, such as the meaning of the event for her, the insights she might gain into her own research, and the colleagues she might meet and with whom she could share discussion. As the time of the event becomes imminent, however, she focuses on less significant details related to the feasibility of attending, such as the time and energy that attendance will require.

Research on temporal construal thus suggests that decision makers may focus more on aspects related to the desirability of outcomes when making decisions involving more distant future others, whereas they may focus more on feasibility when making decisions involving the interests of temporally closer generations of future others (Lieberman & Trope, 1998). When

considered in conjunction with the previous findings on immortality striving in intergenerational decisions, this potential effect of temporal construal has some interesting implications. Specifically, if concern with one's future legacy is salient at the point of decision making and immortality striving is thus an active (if nonconscious) goal in the decision-making process, then greater time delays between present and future generations may enhance intergenerational beneficence. For example, if a decision maker is seeking to secure a positive future legacy, then when temporal delay is relatively low, the decision maker may focus on the feasibility of achieving that legacy and may consequently consider the uncertainty that characterizes future outcomes and the interpersonal distance between the self and future others. In such cases, the negative effects of time discounting and egocentric biases may overwhelm the desire for a positive legacy. When the temporal delay between generations is greater, however, then the decision maker may be more likely to focus on the desirability of creating a positive future legacy (a psychological benefit) and to focus less on the practical material concerns raised by outcome uncertainty and interpersonal distance. In such cases, the likelihood of intergenerational beneficence may be higher. Moreover, another reason to expect that greater time delay between present and future generations may increase intergenerational beneficence is that the greater the time delay between present and future generations, the greater the opportunity to symbolically extend the self into the future. Thus, further research should explore the possibility that greater intertemporal distance between generations enhances beneficence under conditions of mortality salience.

Finally, we suggest that a key factor influencing intergenerational beneficence is a concern for the ethical nature of one's legacy. Legacies can be positive or negative. Consider the example of Alfred Nobel. In 1888, following his brother's death, Alfred Nobel, the inventor of dynamite, was reading what was supposed to be his brother's obituary in a French newspaper. Nobel realized that the newspaper editor had confused the two brothers and, as a consequence, had written an obituary for Alfred instead. The headline proclaimed, "The Merchant of Death is Dead!" describing a man who had gained his wealth by helping people to kill one another. Nobel was deeply troubled and it is believed that this glimpse of what might have been his negative legacy was pivotal in motivating him to leave nearly his entire fortune following his actual death 8 years later to fund annual awards, the Nobel Prizes, for those whose work most benefit humanity. The example of Alfred Nobel demonstrates that people care about their legacies

and that people generally desire to leave a positive legacy.

### *Resource Valence*

The fact that legacies can be either positive or negative, coupled with the presumption that most people prefer their legacy to be positive, brings the role of resource valence into the intergenerational story. Allocation decisions can involve different types of resources, and the nature of those resources makes a pivotal difference in decision-making processes and outcomes (Mannix, Neale, & Northcraft, 1995; Northcraft, Neale, Tenbrunsel, & Thomas, 1996). Decision makers may be allocating desirable benefits (e.g., profit or natural resources) or, in contrast, they might be distributing burdens that they and others wish to avoid (e.g., debt or hazardous waste). In the case of benefits, acting on the behalf of future generations involves consuming fewer desirable resources to preserve some portion of them for future others; in the case of burdens, intergenerational beneficence is demonstrated by leaving fewer undesirable resources for future others. Research on intergenerational dilemmas suggests that resource valence (i.e., whether resources are benefits or burdens) is an important variable in intergenerational resource allocations that can influence concerns about one's lasting impact on others.

In a series of experiments, Wade-Benzoni, Sondak, and Galinsky (forthcoming) found that people exhibit greater intergenerational beneficence when allocating burdens than when allocating benefits to future others. This effect is robust across a variety of contexts and participant populations (Wade-Benzoni et al., forthcoming) and is notably in contrast to the effect of valence found in other resource allocation situations, such as negotiations, in which people become more self-interested when allocating burdens as compared to benefits (Okhuysen, Galinsky, & Uptigrove, 2003; Sondak, Neale, & Pinkley, 1995).

The majority of studies in the literature on interpersonal allocations have focused on positive or beneficial resources. Although some researchers have characterized benefits and burdens as simply the inverse or absence of each other (Elster, 1992; Mikula, 1980), this assumption is limiting because there is good evidence that they are not psychologically equivalent (Griffith & Sell, 1988; Lamm & Kayser, 1978; Mannix et al., 1995; Northcraft et al., 1996; Okhuysen et al., 2003; Sondak et al., 1995; Törnblom, 1988). Diverse research in psychology provides evidence that negative events (such as enduring a burden) elicit more physiological, affective, cognitive, and behavioral activity and prompt more cognitive analysis than neutral or positive events (such

as experiencing a benefit; Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Taylor, 1991). Negative events are more likely to capture attention and are considered and contemplated for longer periods of time than are positive or neutral events (Abele, 1985; Bohner, Bless, Schwartz, & Strack, 1988; Pratto & John, 1991). They are also perceived as more complex and bring forth more causal attributional activity than do positive events (Peeters & Czapinski, 1990; Weiner, 1985).

Research that directly compares allocations of benefits to burdens indeed shows that resource valence substantially affects decision processes and outcomes. In negotiation contexts, people are willing to pay more to avoid a burden than to gain an equal benefit and require much greater compensation to accept a burden than to give up a benefit (Northcraft et al., 1996). In addition, negotiators reject burdens more strongly than equal benefits are pursued (Sondak et al., 1995), and negotiating the allocation of burdens generates more self-interested and competitive behavior compared to negotiating over benefits (Okhuysen et al., 2003). Generally, the allocation of burdens as compared to benefits leads to more self-interest and contentiousness toward others in negotiations.

Unlike negotiations, intergenerational contexts involve allocations to powerless others and provide the opportunity to leave a legacy. Given that the power asymmetry that characterizes intergenerational dilemmas can activate feelings of social responsibility (Handgraaf et al., 2008; Wade-Benzoni et al., 2008) and that legacy concerns are central to intergenerational decisions (Wade-Benzoni, 2006b; Wade-Benzoni et al., forthcoming, 2009; Wade-Benzoni, et al., 2009), the effect of valence on self-interest is different in intergenerational contexts as opposed to in the negotiation situations previously studied. In negotiations, where others can be expected to protect their own interests, people are more self-interested when allocating burdens as opposed to benefits. In contrast, in intergenerational dilemmas, in which other parties are powerless and vulnerable to the decision of the allocator, research has found that people are less self-interested in allocations of burdens as compared to benefits (Wade-Benzoni et al., forthcoming). This effect is consistent with research on ingroup favoritism, which shows that people hesitate to impose explicitly aversive outcomes on powerless others. Although people favor their ingroup when unilaterally allocating positive resources, they refrain from discriminating behavior when allocating negative resources (e.g., Blanz, Mummendey, & Otten, 1997; Mummendey et al., 1992; Otten & Mummendey, 1999). People appear to consider imposing burdens on powerless others to be more morally problematic than neglecting to leave them benefits.

The notion that leaving burdens for powerless others is seen as morally worse than neglecting to leave them

benefits is consistent with research on the psychological effects of omissions versus commissions. The omission bias refers to the tendency to favor omissions over otherwise equivalent commissions, especially when either one might cause harm (Ritov & Baron, 1990). There are often good reasons for the distinction between omissions and commissions; specifically, omissions may result from ignorance, whereas commissions usually do not (Ritov & Baron, 1990). In addition, if one accepts that judgments of morality often depend on intent, commissions can be seen as more morally charged because they usually involve more effort, and effort is generally viewed as a sign of stronger intentions. Yet, in cases in which knowledge and intentions are held constant, and thus omission and commission are technically and theoretically moral equivalents, research has indicated that people continue to treat them differently. For example, Spranca, Minsk, and Baron (1991) found that active deception was considered worse than withholding the truth, even when the actor's intention to deceive was judged to be the same in the two cases. In addition, Spranca et al. (1991) argued that when people know that harmful omissions are socially acceptable, their level of self-interest increases.

This research is consistent with the view that allocations of burdens are more morally charged than allocations of benefits because undesirable consequences to future generations that arise from intergenerational decisions involving benefits (i.e., future generations receive too few benefits) are likely to be viewed as omissions, and those that arise as a result of the allocation of burdens (i.e., future generations receive too many burdens) are likely to be viewed as commissions. In other words, if a future generation is worse off because a previous generation neglected to preserve a benefit for them, it appears that the previous generation failed to take action (i.e., that they did not explicitly preserve the resource for the future) and thus committed an act of omission. In contrast, if the future generation is worse off because the previous generation left behind a burden, the leaving of the burden seems more like an action (i.e., commission).

These arguments are also consistent with norm theory (Kahneman & Miller, 1986) and the loss aversion aspect of prospect theory (Kahneman & Tversky, 1984). Specifically, omissions tend to be seen as foregone gains, which are less aversive than the pure losses caused by commission (Ritov & Baron, 1990). Research on framing effects has provided consistent evidence that individuals do not respond to the prospect of gains versus losses in the same way (Tversky & Kahneman, 1981). For example, a given difference between two options will have a greater effect if it is viewed as the difference between two disadvantages than if it is viewed as the

difference between two advantages (Thaler, Kahneman, & Knetsch, 1992). We agree with the assertion made by Sondak et al. (1995), however, that the distinction between benefits and burdens is not simply a matter of framing. In framing studies, what is gained or lost is identical across conditions—the outcomes in the two conditions are the same, and what differs is how those outcomes are described. Comparing the allocation of benefits and burdens, on the other hand, involves comparing two different outcomes, one of which is desired, one of which is not.

Research on intergenerational dilemmas provides empirical support for the notion that allocating burdens as compared to benefits to future generations creates more of a moral dilemma for present decision makers and is linked to legacy concerns. Wade-Benzoni et al., (forthcoming) found that considerations of ethics accounted for (i.e., mediated) the observed allocation differences between benefits and burdens in intergenerational resource allocations. Concern for the ethical nature of one's legacy derives from a motivation to pursue achievements consistent with one's values, and most people place some value on perceiving themselves as ethical. Consistent with this reasoning, Wade-Benzoni et al., (forthcoming) further found that allocating burdens (as compared to benefits) increased concern with one's legacy, heightened ethical concerns, and led to feelings of greater responsibility for and affinity with future generations. As a consequence, people exhibited greater intergenerational beneficence when allocating burdens than when allocating benefits to future others.

### CONCLUDING COMMENTS AND SUMMARY

Research on intergenerational dilemmas provides converging evidence that intergenerational contexts create a unique set of psychological dynamics. Whereas intergenerational decisions share an interpersonal dimension with self–other tradeoffs, and an intertemporal dimension with intertemporal choice, intergenerational allocations of resources differ from allocations to other people in the present and from allocations to oneself in the future. Although some effects associated with intertemporal and interpersonal distance derived from research on intertemporal personal choice and self–other tradeoffs do indeed generalize to intergenerational contexts, many other unique and unexpected effects emerge from the combination of these two dimensions.

In the face of time discounting, uncertainty about the future, egocentrism, power asymmetry, and the absence of direct reciprocity, the barriers to intergenerational beneficence are great. If we simply extrapolate from what we already know from diverse literatures separately, we

might expect the prospects for future generations to be grim. Research on intergenerational dilemmas suggests, however, that the various structural elements that come together to characterize intergenerational decisions can cause them to be more ethically charged than other resource allocation situations. When making intergenerational decisions, people are in a position to determine outcomes to powerless and voiceless others, which leads them to consider the moral implications of their actions quite seriously. Research suggests that people act on the behalf of future generations partly due to the social responsibility concerns that the context elicits. Thus, counterintuitively, the power asymmetry and uncertainty inherent in intergenerational decisions can temper self-interest.

Critically, research on intergenerational dilemmas also highlights how the intertemporal and interpersonal dimensions of intergenerational decisions can combine to promote other-oriented behavior in a non-obvious way: Intergenerational beneficence represents an opportunity to create an enduring sense of personal life meaning by establishing a legacy and thus extending oneself into the future to create a positive, ethical, and lasting impact on others. Acting on the behalf of a future other paradoxically represents a dramatic form of self-interest—immortality striving. The desire to extend ourselves beyond mortal life is a deep and strong impetus for generative action. By implication, research on intergenerational dilemmas challenges the dichotomy between self and other interest. Believing that one has made a difference by leaving a group, an organization, a professional field, or the world a better place than it was before we became a part of it helps us to gain a sense of purpose in our lives and buffer the threat of meaninglessness posed by death.

### NOTE

1. We note that Trivers's (1971) model would, however, predict intergenerational beneficence toward one's own offspring and other genetic descendants (e.g., see Buss, 1995).

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