

It's Only a Matter of Time:

Death, Legacies, and Intergenerational Decisions

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### **Abstract**

Intergenerational decisions are decisions that affect other people in the future. The combination of intertemporal and interpersonal distance between current decision makers and future others may lead one to expect little intergenerational generosity. In this paper, however, we posit that the negative effect of intertemporal distance on intergenerational beneficence is reversed when people are primed with thoughts of death because death priming leads individuals to be concerned with having a lasting impact on future others. Our studies show that when individuals are exposed to death priming, the expected tendency to allocate fewer resources to future as compared to present others is reversed. Our findings suggest that legacy motivations triggered by death priming can trump intergenerational discounting tendencies and promote intergenerational beneficence.

*Key words:* death; discounting; intergenerational; legacy; time

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Decisions that individuals make today often affect not only the experiences of contemporaries, but also determine resources available to future generations. Research on self-other tradeoffs (e.g., Jones & Rachlin, 2006; Loewenstein, Thompson, & Bazerman, 1989) and intertemporal discounting in individual decision making (e.g., Frederick, Loewenstein, & O'Donoghue, 2002; Loewenstein, Read, & Baumeister, 2003) has found that individuals tend to be selfish and short-sighted in their use of resources. Individuals favor allocating resources to themselves rather than to others, and they favor immediate to future consumption. Thus, one would expect that when individuals are faced with making self-other tradeoffs in intergenerational contexts, beneficence to future others would be quite minimal. Indeed, research has demonstrated that as the temporal distance between the decision and the accrual of benefits to others increases, beneficence to others decreases (Wade-Benzoni, 2008).

We propose, however, that when people are primed with thoughts of death, individuals' inherent desires to generate a positive legacy can transform the expected barriers to intergenerational beneficence (i.e., social and temporal distance) into conditions that promote beneficent allocations to future others. Scholars have noted that our strong drive for self-preservation, coupled with the knowledge of the certainty of our own eventual deaths, fuels a motivation to know that a part of us will live on past our physical existence (e.g., Becker, 1973; 1975). Individuals strive to transcend death by finding expansive meaning for their lives. Central to this meaning is having an impact on others that persists into the future (Kotre, 1984; 1999). A legacy can function as a carrier of personal life meaning that extends oneself into the future

beyond the temporal constraints of the lifespan through impacts on future others (Fox, Tost, & Wade-Benzoni, 2010).

We suggest that intergenerational beneficence in reaction to thoughts of death is a means by which individuals can form a psychological bond with future others, thereby symbolically extending themselves into the future and helping to fulfill their desires to establish a positive legacy. Importantly, it is only intergenerational allocations, and not allocations to others in the present or to oneself in the future, that elicit these reactions. The *combination* of intertemporal and interpersonal distance enables legacy-building potential; one cannot create a legacy by having a fleeting effect on others now or by affecting merely one's own future self. Thus, intergenerational decisions provide a unique opportunity to form a connection with future others, thereby serving as an outlet for legacy motivations.

Accordingly, our research extends past findings within the Terror Management Theory (TMT) literature, where scholars have demonstrated that a broad range of thoughts, attitudes, and behavior are rooted in the human need to combat the notion that physical death is the end of individual existence (Jonas, Schimel, Greenberg, & Pyszczynski, 2002), by specifying conditions under which death priming leads to beneficent behavior. For example, although scholars have found that death priming can increase selfishness in forest management games (Dechesne et al., 2003; Kasser & Sheldon, 2000), such scenarios have not involved other players who will only experience the impact of decisions in the future. Consistent with the tenets of intergenerational decision making (e.g., Wade-Benzoni, 2006), we expect that the positive effect of death priming on intergenerational beneficence may require the specification of future beneficiaries, even if they are only vaguely identified, so that a self-other tradeoff is explicit.

In our experiments, we examine how death priming interacts with the timing of when another recipient of resources will benefit from an allocation (i.e., present versus future) to influence the extent to which people engage in beneficent behavior toward others. We predict that (1) death priming increases individuals' desires to establish a positive legacy by forming a connection with future others through beneficent behavior, and (2) when individuals are exposed to death priming, the expected tendency to allocate fewer resources to future than to present others will be reversed, such that people will allocate resources more generously to future others relative to contemporary others. We further expect these effects to be mediated by a feeling of connection with allocation recipients.

## **Experiment 1**

### **Methods**

Fifty-four graduate students at a large U.S. university were entered into a lottery to win \$1000 as compensation for participation. The experiment had a 2 (Prime: death vs. control) by 2 (Recipient: present vs. future) between-participants design. Participants first read a newspaper article that contained the experimental manipulation, and then they were asked to write briefly about the author's writing style. In the death prime condition, the article was titled "Person killed in aircraft brake failure accident," and described an airplane that had careened onto a highway in a mid-sized urban area, killing someone. In the control condition, the article was titled "Has Russian math whiz solved \$1M puzzle?" and described a reclusive Russian mathematician who had posted on the internet a solution to one of the world's toughest math problems. (Pilot Study Death Prime supplementary file available online.)

Participants then saw a statement thanking them for participating and confirming that they would be entered in the lottery. Participants were told that in the event that they won the

lottery, they could pre-commit a portion of the prize to a charity. Participants were presented with a description of an actual charity that was described as serving the needs of individuals in “impoverished communities.” In the present recipient condition, the charity was described as an organization that focuses on meeting the immediate needs of people in those communities. In the future recipient condition, the charity was described as an organization that focuses on creating lasting improvements that will benefit people in those communities in the future. The amount of U.S. dollars that individuals indicated they would like to donate was used as the measure of beneficence. Participants were not aware that this question constituted the dependent variable.

## Results

The two-factor between-participants ANOVA with donation amount as the dependent variable revealed no main effects and a significant interaction between death priming and recipient ( $F(1,50)=10.49, p=.002, \eta_p^2=.173$ ) (see Figure 1). Levene’s Test for Equality of Variances indicated that the assumption of homogeneity of variance was violated, so we further examined our predictions using unequal variance t-tests. Consistent with our predictions, individuals in the control condition allocated more to the present charity ( $M=257.77, SD=249.79$ ) than to the future charity ( $M=100.00, SD=173.21$ ),  $t(20.38)=1.95, p=.065$ , while participants in the death prime condition allocated significantly more to the future charity ( $M=235.71, SD=223.98$ ) than to the present charity ( $M=40.00, SD=80.97$ ),  $t(17.35)=3.01, p=.008$ ). In addition, individuals exposed to the death prime allocated more to the future-oriented charity than did individuals in the control condition,  $t(24.19)=1.86, p=.076$ .

## Experiment 2

In our next experiment, we sought to replicate our previous findings and test our prediction that these effects would be mediated by a perceived connection with allocation

recipients. In addition, in order to provide support that this effect is unique to intergenerational contexts, we included a “future self” condition in which individuals were asked to allocate resources between themselves in the present and themselves in the future. This condition allowed us to manipulate time and social distance independently. We expected that the reversing effect of the death prime would occur only when allocating to others.

## **Methods**

Seventy-one (50 females) undergraduates (42%), graduate students (31%), and working adults (25%) participated in the online experiment in exchange for \$10. Following the same death or control prime used in Experiment 1, participants were asked to allocate a resource between themselves in the present and one of three other recipients: 1) others who would benefit from the resource in the present (“present-other”), 2) others who would benefit from the resource in the future (“future-other”), or 3) themselves in the future (“future-self”). Thus, the experiment had a 2 (Prime) by 3 (Recipient) between-participants design.

Materials described a situation in which the participant was the vice-president of operations of an energy company’s subsidiary. Participants were told that their company was in possession of a new energy source and that the energy source could be converted into inexpensive and efficient usable energy. Their task was to decide how much of the converted energy they wished to consume today versus allocate to the recipient.

Participants in the present-other and future-other conditions were told that another subsidiary of the parent company of their firm wanted access to the participant’s supply of the energy source and that the other subsidiary had access to superior technology that would allow the other subsidiary to make 50% greater use of the energy (either now [present-other] or in the future [future-other]) than the participant’s own division would be able to make of it now.

Similarly, participants in the future-self condition were told that their own division would make 50% greater use of the energy in the future than the participant's division would be able to make of it now. The indication of increasing future benefit was included in order to keep the situation consistent with the structural features of intergenerational dilemmas, in which resources tend to increase in value with the passing of time (Wade-Benzoni, 2002; Wade-Benzoni, Hernandez, Medvec, & Messick, 2008; Wade-Benzoni & Tost, 2009).

**Measure of beneficence.** The measure of beneficence was the percentage of the converted energy that participants indicated they would allocate to the recipient rather than themselves in the present.

**Measure of mediator.** In the other-present and other-future conditions, participants were asked to indicate the extent to which they agreed with the statement "I felt an affinity with the other subsidiary" (1 = *strongly disagree*, 7 = *strongly agree*).

## Results

The beneficence scores were submitted to a two factor between-subjects ANOVA. The analysis revealed no main effects and a significant interaction ( $F(2,65)=3.17, p=.049, \eta_p^2=.089$ ) (Figure 2). The pattern of means was as expected. First, participants primed with death exhibited higher levels of beneficence when allocating to others who would benefit in the future ( $M=62.90, SD=21.13$ ) than when allocating to others who would benefit in the present ( $M=39.64, SD=24.92$ ),  $F(1,45)=5.48, p=.024; \eta_p^2=.109$ . Second, individuals exposed to the death prime allocated significantly more to others who would benefit in the future than did individuals in the control condition ( $M=38.09, SD=22.07$ ),  $F(1,45)=5.60, p=.02; \eta_p^2=.11$ . Also consistent with our theoretical rationale, participants in the control condition exhibited greater beneficence to themselves in the future ( $M=58.42, SD=18.49$ ) than to others in the future ( $M=38.09, SD=22.07$ ),

$F(1,39)=4.73, p=.036; \eta_p^2=.108$ ), but this tendency was eliminated in the death prime condition (future-self:  $M=59.00, SD=27.67$ ; contrast ns).

We predicted first-stage moderated mediation, in which the recipient of the allocation (present vs. future) would moderate the effect of death priming on feelings of connection with others. Thus, we expected that when participants were asked to allocate to others who would benefit from the resource in the future, death priming would increase their feelings of connection to the beneficiaries of their allocations, whereas death priming would have no effect on feelings of connection with beneficiaries who would benefit from the resource in the present. We used bootstrapping methods to construct bias-corrected confidence intervals of the simple and indirect effects based on 1,000 random samples with replacement (Edwards & Lambert, 2007).

Consistent with our expectations, the indirect path from death prime to beneficence through feelings of connection was significant for allocations to future others ( $b=8.49$ , bias-corrected 95% confidence interval: 0.40, 25.61) but not for allocations to present others ( $b=-3.67$ , 95% confidence interval: -13.09, 3.72) (Table 1).

### **General Discussion**

People can gain psychological security in the face of death by feeling as though they are part of something that will “live on” after them. Acting on behalf of future others represents an opportunity to create a feeling of connection with future others, thereby helping to fulfill legacy-building needs. The experiments presented here support this notion. Individuals primed with death engaged in more beneficent behavior when allocating to others who would benefit from the resources in the future than when allocating to others who would benefit from the resources in the present. This result indicates a reversal of the tendency for time delay to reduce beneficence to future others.

Thus, in contrast to what might be expected based on traditional theories of intertemporal choice, our research suggests that, under certain conditions, the temporal aspect of intergenerational contexts can promote rather than hinder other-oriented behavior.

In addition, the results of Experiment 2 supported our causal mechanism: Relative to individuals in the control condition, individuals primed with death felt a stronger connection to other recipients in the future than to those in the present, and this feeling of connection mediated the effects on beneficence. These findings suggest that acting on the behalf of future others allows individuals an opportunity to extend themselves symbolically into the future, creating a feeling of connection with future others and helping to fill legacy-building needs that emerge from reminders of death.

Our findings also make important theoretical contributions to research on the effect of death priming on prosocial behavior. TMT researchers have examined the effect of death priming on individuals' other-oriented behaviors, finding that death primes increase prosocial behavior toward those who validate the individual's worldview, but not toward others who violate it (Jonas, Schimel, Greenberg, & Pyszczynski, 2002). According to TMT, death priming does not increase prosocial behavior toward the latter group because the purpose of prosocial behavior in this context is purportedly to endorse others who represent the individual's worldview. Our work suggests an additional situation in which death priming can produce beneficent behavior: Not only does death priming increase the desire to help others with whom we already feel a connection (e.g., individuals in our cultural groups), but it also induces a desire to connect with future others as a mechanism for establishing a legacy, which produces beneficence to future others. One finding from TMT research, however, may identify possible boundary conditions of our effects: Hirschberger, Ein-Dor, and Almakias (2008) found that death

priming decreased participants' willingness to sign organ donation cards. With organ donation, it is unclear whether the recipient's existence alone provides personal meaning to the donor. We suspect that organ donation creates a stronger legacy for the donor when it allows the recipient to pursue purposes that are meaningful to the donor. We also suspect that activities requiring death are less desirable as mechanisms for legacy creation than those that do not. Future research should examine these propositions.

Intertemporal and interpersonal distance creates inherent barriers to intergenerational beneficence. We highlight, however, that these two components can, under certain conditions, combine to produce psychosocial benefits that promote intergenerational beneficence. The intertemporal aspect of intergenerational decisions can change the meaning of interpersonal tradeoffs, transforming them into an opportunity for self-extension in time. These findings imply that the success of how much public policies can encourage environmentally and ecologically sustainable behaviors, for example, may depend on making individuals' mortality salient and explicitly framing their decisions as intergenerational tradeoffs. Taken together, the results indicate that the desire to extend ourselves into the future and potentially beyond mortal life, such as when one creates a legacy, is a deep and strong impetus for generative action.

### References

- Becker, E. (1973). *The denial of death*. New York: Free Press.
- Becker, E. (1975). *Escape from evil*. New York: Free Press.
- Dechesne, M., Pyszczynski, T., Arndt, J., Ransom, S., Sheldon, K. M., van Knippenberg, A., & Janssen, J. (2003). Literal and symbolic immortality: The effect of evidence of literal immortality on self-esteem striving in response to mortality salience. *Journal of Personality and Social Psychology, 84*, 722-737.
- Edwards, J. E. & Lambert, L. S. (2007). Methods for integrating moderation and mediation: a general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1-22.
- Fox, M., Tost, L.P., & Wade-Benzoni, K.A. (2010). The legacy motive: A catalyst for sustainable decision making in organizations. *Business Ethics Quarterly, 20:2*, 153-185.
- Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, 40*, 351-401.
- Hirschberger, G., Ein-Dor, T., & Almakias, S. (2008). The self-protective altruist: Terror management and the ambivalent nature of prosocial behavior. *Personality and Social Psychology Bulletin, 34*, 666-678.
- Jonas, E., Schimel, J., Greenberg, J., & Pyszczynski, T. (2002). The Scrooge effect: Evidence that mortality salience increases prosocial attitudes and behavior. *Personality and Social Psychology Bulletin, 28*, 1342-1353.
- Jones, B., & Rachlin, H. (2006). Social discounting. *Psychological Science, 17*, 283-286.
- Kasser, T., & Sheldon, K. M. (2000). Of wealth and death: Materialism, mortality salience, and consumption behavior. *Psychological Science, 11*, 348-351.

- Kotre, J. (1984). *Outliving the self: Generativity and the interpretation of lives*. Baltimore: Johns Hopkins University Press.
- Kotre, J. (1999). *Make it count: How to generate a legacy that gives meaning to your life*. New York: Free Press.
- Loewenstein, G.F., Read, D., & Baumeister, R. (2003). *Time and decision: Economic and psychological perspectives on intertemporal choice*. New York: Russell Sage Foundation.
- Loewenstein, G. F., Thompson, L., & Bazerman, M. H. (1989). Social utility and decision making in interpersonal contexts. *Journal of Personality and Social Psychology*, 57, 426-441.
- Wade-Benzoni, K. A. (2002). A golden rule over time: Reciprocity in intergenerational allocation decisions. *Academy of Management Journal*, 45, 1011-1028.
- Wade-Benzoni, K.A. (2006). Legacies, immortality, and the future: The psychology of intergenerational altruism. *Research on Managing Groups and Teams*, 8, 247-270.
- Wade-Benzoni, K. A. (2008). Maple trees and weeping willows: The role of time, uncertainty, and affinity in intergenerational decisions. *Negotiation and Conflict Management Research*, 1, 220-245.
- Wade-Benzoni, K. A., Hernandez, M., Medvec, V. H., & Messick, D. M. (2008). In fairness to future generations: The role of egocentrism, uncertainty, power, & stewardship in judgments of intergenerational allocations. *Journal of Experimental Social Psychology*, 44, 233-245.
- Wade-Benzoni, K. A., & Tost, L. P. (2009). The egoism and altruism of intergenerational behavior. *Personality and Social Psychology Review*, 13, 165-193.

Table 1

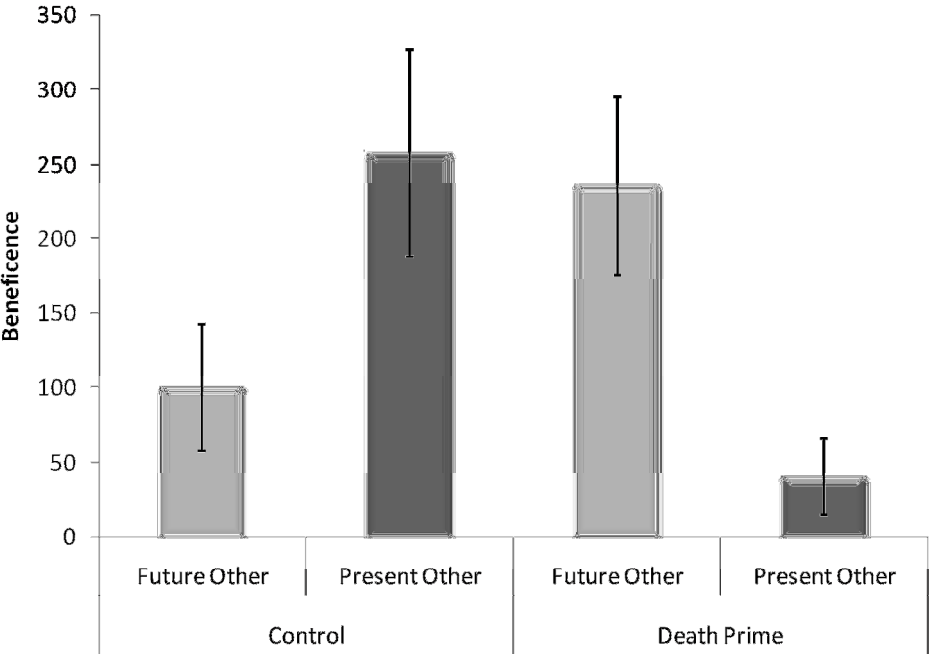
*Decomposed Effects for Moderated Mediation (Experiment 2) Regression Analysis*

Moderator:	Stage		Effect		
	First	Second	Direct	Indirect	Total
Allocation Recipient					
Future-other	0.66*	12.87**	7.30	8.49*	15.79**
Present-other	-0.28	13.13**	-2.38	-3.68	-6.06
Differences	0.94*	-0.26	9.68	12.17*	21.85**

*Notes:* We used contrast coding for both manipulated variables (death prime=1, control=-1; future-others=1, present-others=-1). Tests of differences for the indirect and total effect were based on 95% bias-corrected confidence intervals derived from bootstrap estimates.

\*\*  $p < .01$ , \*  $p < .05$

Figure 1. Two-way interaction in Experiment 1



Note: error bars represent standard errors.

Figure 2. Two-way interaction in Experiment 2

