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## **I want it now *and* I want to get it over with now: Impatience explains discounting anomalies for gains and losses**

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### **Extended Abstract**

In 2 studies, 806 U.S. residents chose between immediate and future gains or immediate and future losses. While participants discounted small gains more than large ones and potential delays (default is now) more than potential accelerations (default is later), their responses for losses reversed or eliminated these classic effects. These anomalies are explained by impatience, which we define as the disutility of waiting. For gains, people are impatient because they want it now, whereas for losses they are impatient because they want to get it over with now. Participants' thought listings confirm the mediating role of impatience and reveal qualitatively different processes for evaluating gains and losses. These results suggest interventions for intertemporal choice dilemmas in domains from personal finance to health to environmental conservation.

### **Background**

When we consider getting \$100, several factors typically motivate us to want it now rather than later. One is *uncertainty* (Weber & Chapman, 2005): we might never receive the \$100 if we wait too long. A second is anticipated *resource slack* (Zauberman & Lynch, 2005): we believe the \$100 will be more useful now than later. A third is *present bias* (Benhabib, Bisin & Schotter, 2007; Laibson, 1997): we are impatient, valuing our immediate welfare more.

While most research has explored the discounting of future gains, discounting of losses is typically much lower (the "sign effect"; Thaler, 1981). Discounting is also lower when outcomes are large (the "magnitude effect"; Thaler, 1981) and when the default date of receiving something is later rather than now (the "direction effect"; Loewenstein, 1988). These effects interact: when considering losses, the magnitude and frame effects are reduced or even

reversed (Benzion, Rapoport & Yagil, 1989; Shelley, 1993). However, as no process data has been collected, these interactions are largely unexplained.

Query Theory suggests that, to arrive at a choice, people generate internal queries serially beginning with the default. Due to output interference, retrieval for later queries is less successful and, thus, the balance of support favors the default (Johnson, Häubl, & Keinan, 2007). Query Theory explains the direction effect within gains: the prominence of “now” thoughts mediates the effect of direction on discounting of gains (Weber et al., 2007).

The present research had two aims: (1) to replicate the interaction of sign, magnitude, and direction using a between-subjects design (previous studies were within-subjects); (2) to examine the role of impatience in these discounting anomalies by collecting and coding thought listings from participants.

### Method

In two experiments, 806 US residents (76% women) from a range of socio-economic backgrounds were recruited and surveyed on the internet. In both studies, participants were randomly assigned to read one scenario. They used a type-aloud protocol to record their thoughts before making their decision. Lastly participants coded their own previously-recorded thoughts as favoring receiving/paying now, favoring receiving/paying later, or neither.

In Study 1, participants in the small gain [loss] condition chose to receive [pay] \$10 now or a larger amount in one year instead. Participants in the large gain [loss] condition chose to receive [pay] \$10,000 now or a larger amount in one year instead.

In Study 2, participants in the gain [loss] delay condition chose to receive [pay] \$50 now or a larger amount in three months instead. Participants in the gain [loss] accelerate condition chose to receive [pay] \$75 in three months or a smaller amount now instead.

### Results

In Study 1, participants discounted gains more than losses. They discounted small gains more than large gains, but small losses *less* than large losses, as shown in Figure 1. Magnitude influenced the prominence of now thoughts (see Figure 2), and this had opposite effects on discount rates for gains and losses. Bootstrapping tests confirmed that the effect of magnitude on discounting was significantly mediated by the prominence of now thoughts for gains and for losses, as shown in Figure 3.

In Study 2, participants again discounted gains more than losses. They discounted delayed gains more than accelerated gains, but delayed losses *less* than accelerated losses, as shown in Figure 4. Direction influenced the prominence of now thoughts (see Figure 5), and this had opposite effects on discount rates for gains and losses. Bootstrapping tests confirmed that the effect of magnitude on discounting was significantly mediated by the prominence of now thoughts for gains and for losses, as shown in Figure 6.

### Discussion

We replicated the sign effect, the magnitude effect, Sign x Magnitude, the direction effect, and Sign x Direction using a between-subjects design. We found that impatience, as measured by the prominence of now thoughts, predicted discounting. Impatience mediated both the effect of magnitude on discounting and the effect of direction on discounting. Importantly, impatience predicted increased discounting of gains but decreased discounting of losses.

All too frequently, people faced with intertemporal choices make decisions that they later regret—the dieter who succumbs to the dessert tray, the worker who retires with insufficient savings, and the community that overfishes their lake. The current work implicates impatience, whether it's impatience to get it now or to get it over with now. Fortunately, the current work also suggests interventions. For gains, we can decrease impatience and discounting by using larger magnitudes (e.g., thinking about amounts aggregated over a series of decisions) or by making the default option later (vs. now). For losses, impatience translates to lower discounting. Therefore, to decrease discounting of losses we should increase impatience by using smaller magnitudes (e.g., thinking about amounts individually) or by making the default option now (vs. later). Giving people the tools to change the prominence of their now thoughts when faced with intertemporal decisions will arm them against making decisions they will later regret.

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## Figures

Figure 1: Discounting by sign (gain vs. loss) and by magnitude (small vs. large).

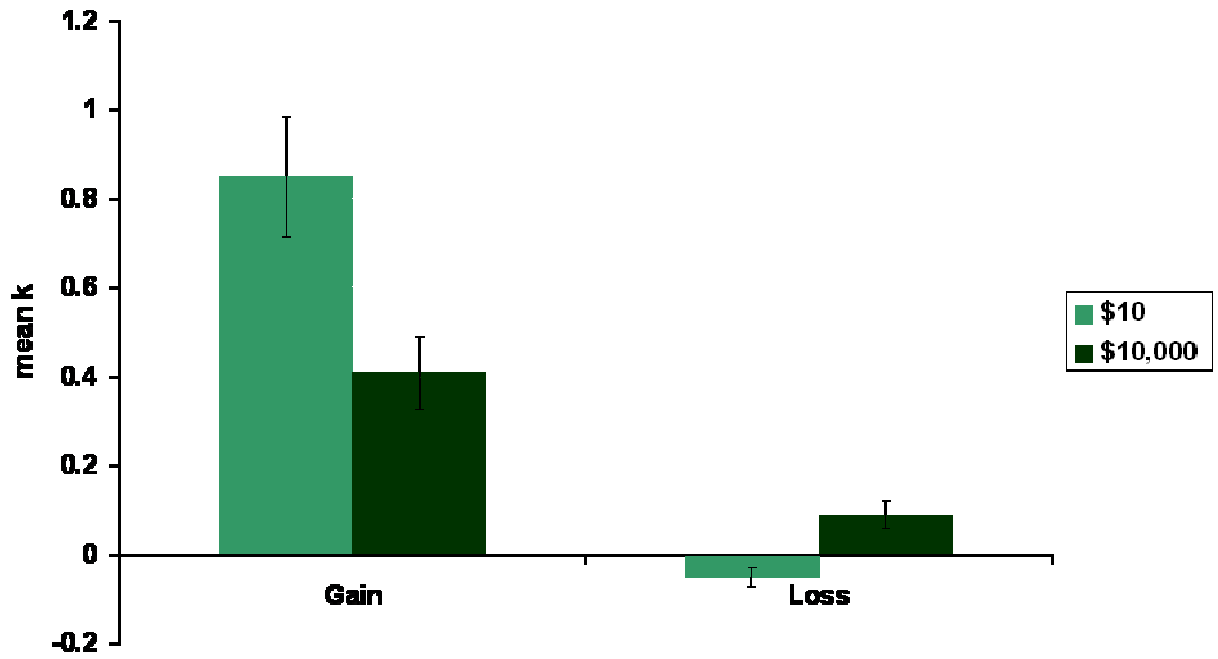


Figure 2: Prominence of now thoughts by sign (gain vs. loss) and by magnitude (small vs. large).

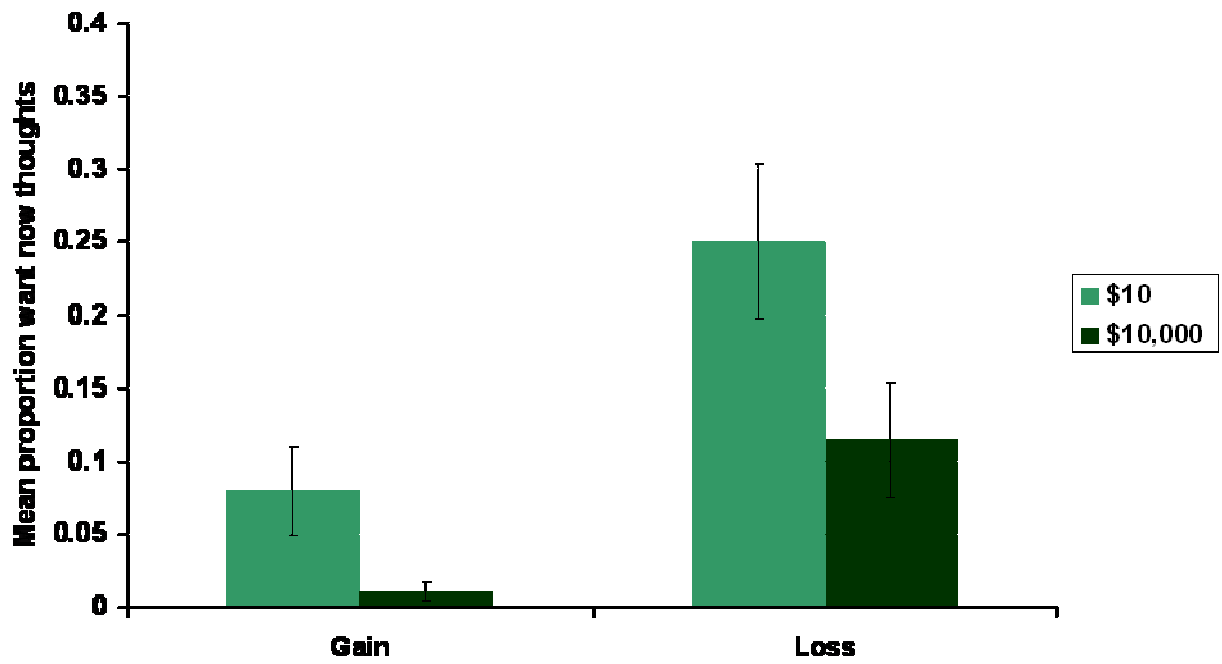


Figure 3: Prominence of now thoughts significantly mediates the effect of magnitude on discounting for gains (3a) and for losses (3b).

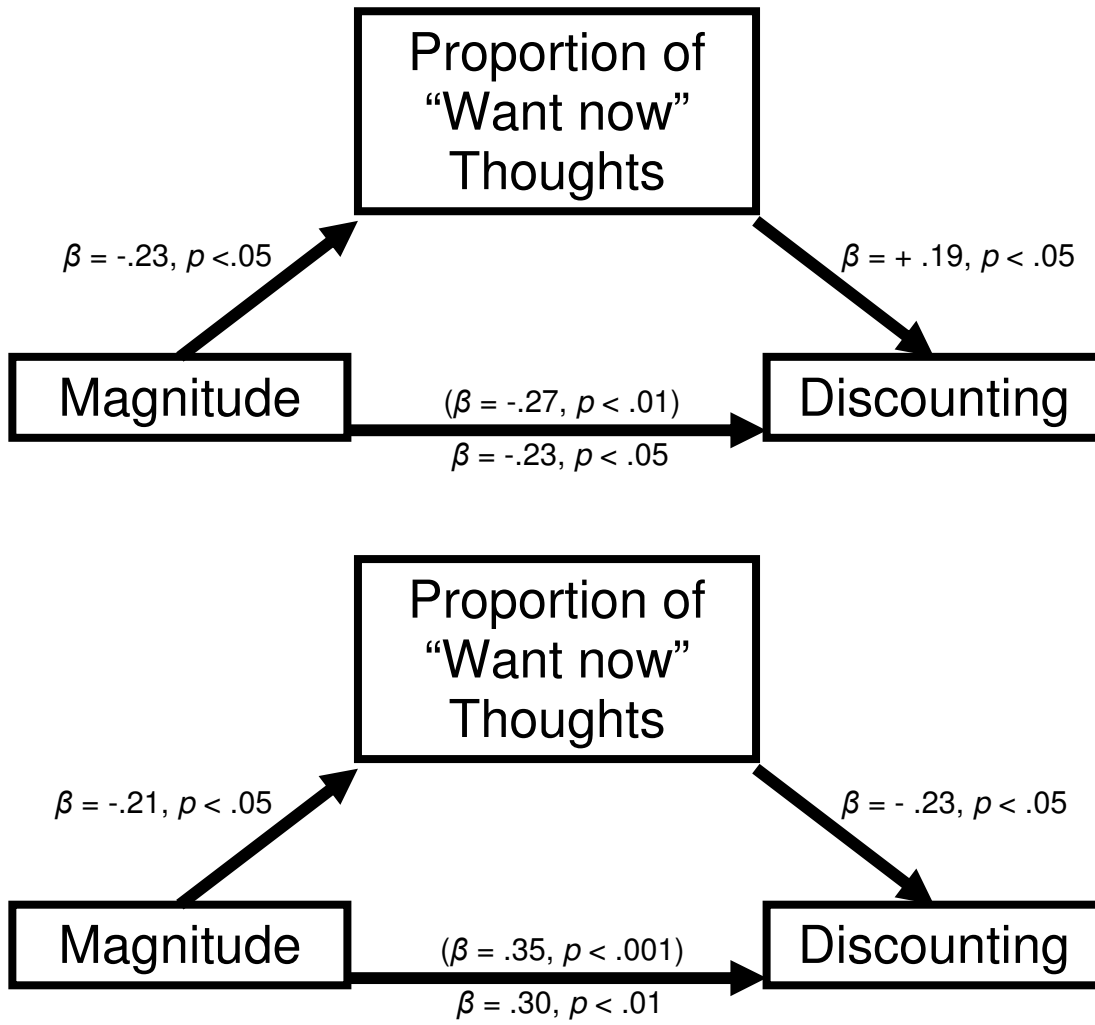


Figure 4: Discounting by sign (gain vs. loss) and by direction (delay vs. accelerate).

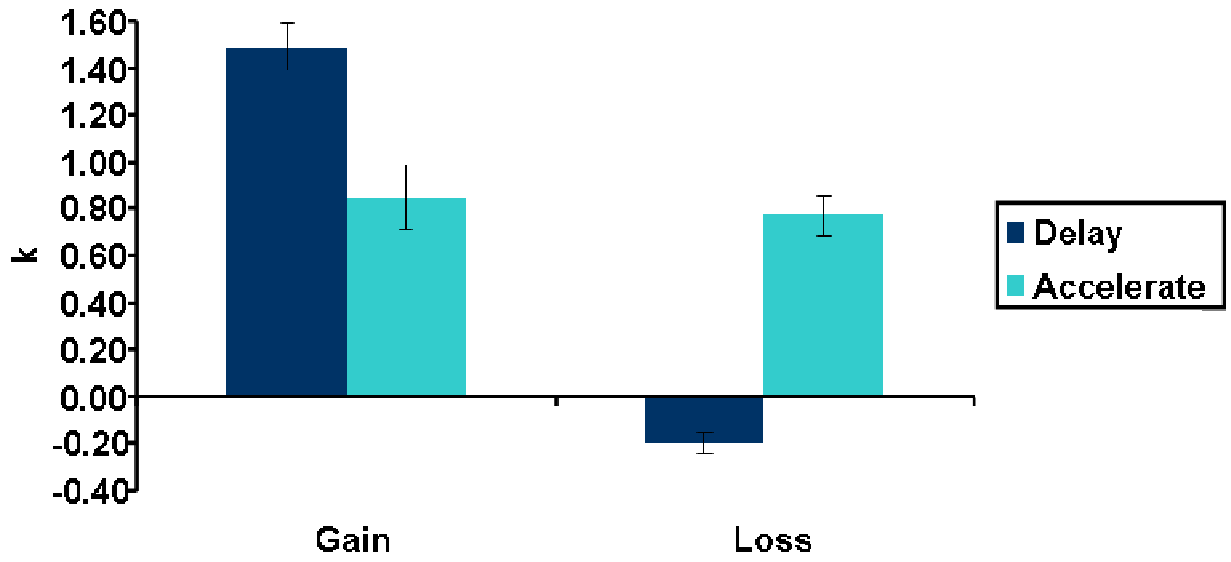




Figure 5: Prominence of now thoughts by sign (gain vs. loss) and by direction (delay vs. accelerate).

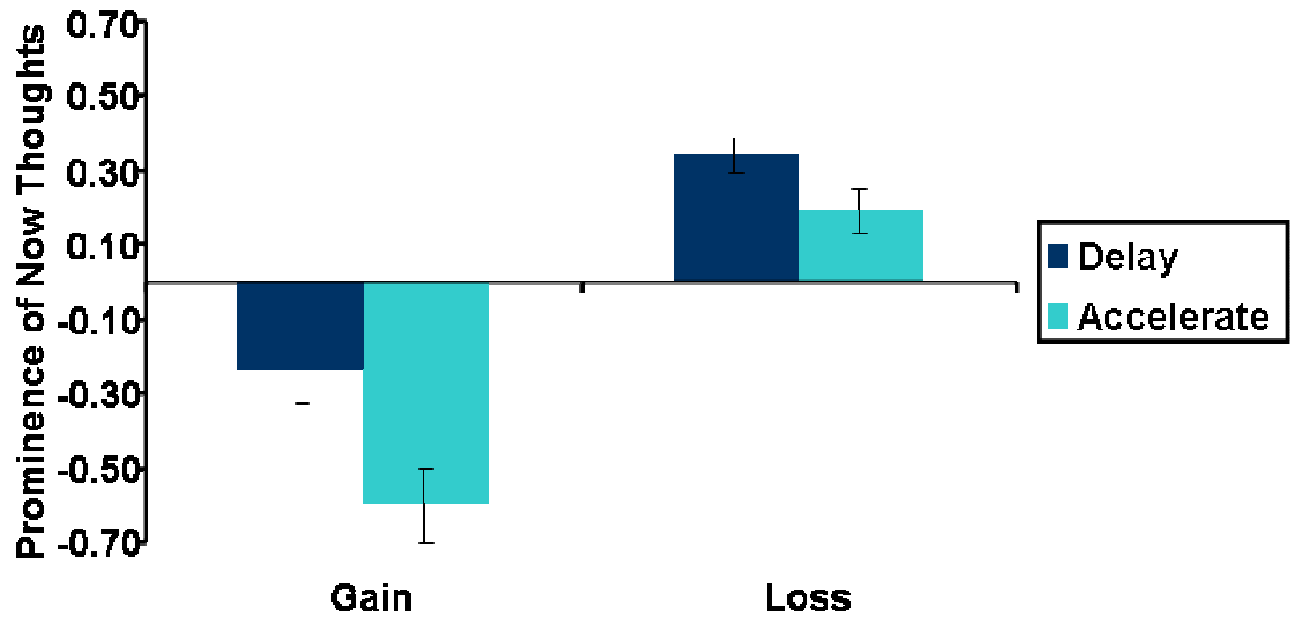


Figure 6: Prominence of now thoughts significantly mediates the effect of direction on discounting for gains (6a) and for losses (6b).

