

The Role of ‘Psychological Connectedness to the Future Self’ in Decisions Over Time

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## Abstract

What motivates people to make decisions in the present that benefit their self in the future? An emerging literature suggests that far-sightedness is influenced by the degree of connection people perceive between their present and future self. People who see their core identity as changing and see their future self as substantially different, are less likely to forego benefits in the present to ensure larger deferred benefits to be enjoyed by that future self they are not as connected to. Recent lab, field and neural evidence relate connectedness to time discounting, as well as more generally to a range of provident behaviors. The review discusses what is known and what remains to be studied about the bases of perceived connectedness, how people incorporate connectedness into their decision-making and which psychological and contextual factors may influence the role of connectedness in decision-making.

Keywords: decision making, future self, far-sightedness, identity, psychological connectedness, time discounting

People are impatient, often preferring benefits they receive soon over more delayed benefits, in a way that is difficult to fully explain by economic factors. This preference is often characterized as time discounting, such that a resource is seen as less valuable (e.g., is *discounted* more) the more that resource is delayed into the future. A large literature over the last 40 years has documented the preference for sooner-smaller rewards (particularly immediate rewards) over later-larger rewards in time discounting tasks, such as choosing between \$120 now or \$180 in a year (reviewed in Frederick, Loewenstein, & O'Donoghue, 2002).

Even when people generally wish to make more far-sighted choices (e.g., choosing healthy salads over tastier desserts), they often fail to defer gratification, giving in to short-sighted temptations (Ainslie, 1975). People who are impatient in time discounting tasks are more likely to exhibit short-sighted behaviors and the resulting outcomes in their finances, education, career and physical health (reviewed in Urminsky and Zauberman, 2016).

What motivates people to be impatient, prioritizing the present over the future? Time discounting is multiply determined, shaped by a variety of economic and psychological factors (Frederick et. al., 2002; Urminsky and Zauberman, 2016). Recent research has suggested that one key factor in people's impatience is how they perceive the link between their current and future self. People who see the traits that define their own personal identity as changing over time are low in *psychological connectedness to the future self*. Seeing the future self as dissimilar, almost as a different person, can undermine the motivation to care about one's own future self. On the other hand, when people see the traits defining their identity as stable and unlikely to change, they have high psychological connectedness to the future self. Seeing the future self as nearly the same person can instead bolster the motivation to care about that future self's welfare.

## PSYCHOLOGICAL CONNECTEDNESS TO THE FUTURE SELF

The philosopher Derek Parfit first defined connectedness to the future self as the degree to which a person has many strong psychological connections (e.g., memories, intentions, beliefs and desires) that overlap between their present and future self (Parfit 1984, p. 204-209). In his normative argument, when people perceive the future self as very different from the present self, it is rational to care less about the welfare of that future less-connected self. This view of what people *should* do, widely debated in the philosophical literature, raises the empirical question of whether people *would* think that way about decisions involving their future self (Frederick et. al., 2002; Frederick 2006).

Why might a lack of full connectedness contribute to high discounting? Choices that involve a stronger conflict between the interests of the present self (such as \$120 now) and benefits for the future self (\$180 in a year) are particularly difficult. Receiving at least a token immediate benefit (\$10 today added to both options) makes the choice easier and facilitates patience, as if the decision involved competing present and future selves (Urminsky & Kivetz, 2011). In fact, the way people make decisions about their own future often parallels the way they make decisions involving other people.

For many kinds of decisions, people choose similarly for themselves in the future and for other people in the present, but differently for themselves in the present (Pronin, Olivola, & Kennedy, 2008). Furthermore, people are less willing to sacrifice their own resources to benefit more socially distant other people than closer others (e.g., social discounting), in much the same way that they are less willing to sacrifice current resources to benefit themselves in the more distant future (time discounting). Both types of reasoning emerge at approximately the same time

in young children (around four years of age; Garon, Johnson, & Steeves, 2011) and both can be described in adults using similar mathematical models (Rachlin & Jones, 2008).

People who socially discount more steeply, prioritizing benefits to their current self over larger benefits to other people, tend to also show stronger time discounting, prioritizing benefits to their current self over larger benefits to their future self (Garon et. al, 2011; Jones & Rachlin, 2009). Likewise, people tend to allocate more resources to the present rather than future self if their brain activation while thinking about their future self is more similar to their brain activation while thinking about other people (Ersner-Hershfield, Wimmer, & Knutson, 2009). This parallel between how people think of their own future self and how they think of others suggests that feeling more connected to the future self may likewise motivate people to care more about benefits experienced by their future self, ultimately resulting in more far-sighted choices.

## PSYCHOLOGICAL CONNECTEDNESS AND FAR-SIGHTED CHOICES

Recent research has directly tested the relationship between psychological connectedness and choices. In one study (Bartels & Urminsky, 2011), graduating college seniors read about life changes related to their upcoming graduation. In the “low connectedness” version, graduation was discussed as also leading to major changes in the person’s core identity. In the “high connectedness” version, personal identity was instead described as already fixed and unlikely to be affected by post-graduation life changes. Participants then made a series of choices for a real lottery, between either receiving a \$120 gift certificate in one week (when the drawing would be held) or receiving gift certificates ranging from \$120 to \$240, in a year.

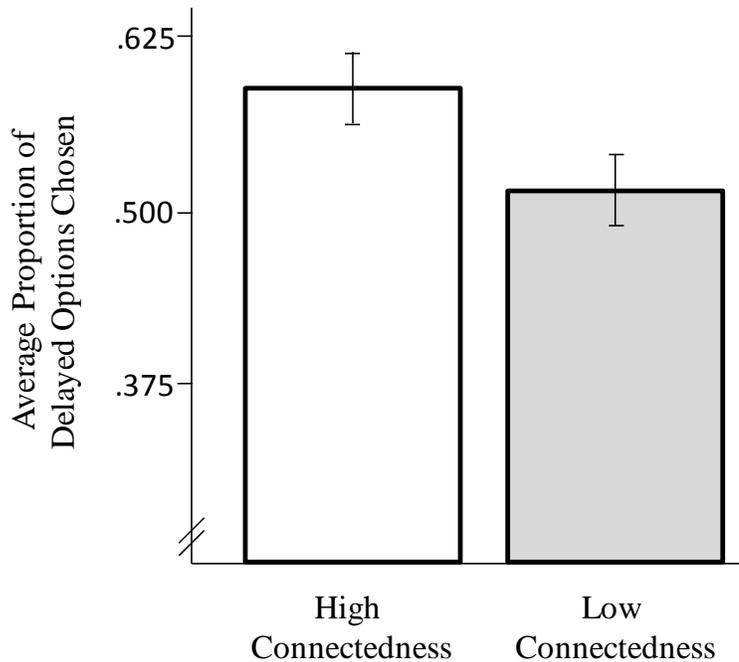


Fig. 1: The effect of connectedness on patience in time discounting, as measured by the proportion of times the more valuable delayed option was chosen. Error bars represent standard errors of the mean proportion. Adapted from Bartels and Urminsky (2011).

Participants in the low connectedness condition, who had read that their impending graduation was associated with a major change in their identity, preferred the immediate lottery rewards. On average, the later certificate needed to be worth at least \$67 more to convince them to wait (Figure 1). In contrast, participants in the high connectedness condition, who had read that their identity would remain stable and would be unaffected by post-graduation life changes, were significantly more patient, willing to wait as long as the later certificate offered an extra \$51 or more.

Other studies have also found that people who are made to feel that their identity is more stable over time are then more patient in both hypothetical and incentive-compatible time discounting tasks (Bartels, Kvaran, & Nichols, 2013; Bartels and Urminsky, 2015), regardless of age or life-stage. Similarly, individual differences in measured connectedness to the future self

often predict time discounting, even controlling for other potentially related psychological constructs (Bartels and Urminsky, 2011; Ersner-Hershfield, Garton, Ballard, Samanez-Larkin, & Knutson, 2009; but not in Frederick 2003) and including incentive-compatible tasks (Ersener-Hershfield et. al., 2009).

Prior research documented inconsistencies in impatience across tasks, such that people are less patient when choosing between a present and future outcome (\$120 now vs. \$180 in 6 months), than when choosing between two future outcomes involving the same degree of delay (\$120 in 6 months vs. \$180 in one year). This non-normative preference is often referred to as hyperbolic discounting (Ainslie, 1975), and may be partially explained by differences in connectedness to the future self over time. People's connectedness to the future self initially declines quickly over time (now vs. in six months) and then continues to decline, but more slowly (in six months vs. in one year; Bartels & Rips, 2010). Furthermore, when people anticipate a future event that will substantially change their identity but not their economic circumstances (such as religious conversion), they are more likely to prefer that resources be received before the change and costs allocated after the change. These findings suggest that people are more impatient when making tradeoffs between present and future outcomes (e.g., as opposed to between two future outcomes), in part, because connectedness between the present and future self is typically lower than between future selves at different times.

#### WHEN IS CONNECTEDNESS RELEVANT TO DECISION-MAKING?

Connectedness may also help explain other decisions and behaviors associated with prioritizing the interests of the future self. In the financial domain, people who scored higher on

connectedness to the future self reported having higher accumulated savings (Ersner-Hershfield, et al, 2009; Joshi & Fast, 2013), chose to spend less money on purchases (when opportunity costs were salient; Bartels & Urminsky, 2015), and kept more money for themselves instead of donating to charity (Bartels et al, 2013).

Connectedness may motivate people to balance short-term consequences with the interests of the future self in other ways as well. Initial research suggests that people higher in connectedness may have more positive views of organizations they would have a relationship with in the future (Zhang & Aggarwal, 2015), engage in less academic procrastination (Blouin-Hudon & Pychyl, 2015) and earn higher grades (Adelman et. al, 2016). When people are more connected, they also believe that they are more deserving of punishment for past unethical behavior (Tierney, Howard, Kumar, Kvaran, & Nichols, 2014), make more ethical choices in the present, and are more likely to keep their future commitments (Hershfield, Cohen, & Thompson, 2012).

The idea of connectedness has also been leveraged to develop conceptually related interventions intended to shift behavior. Providing more vivid visualizations of the future self can increase intended retirement savings (Hershfield et. al, 2011) and reduce unethical intentions and behaviors (Gelder, Hershfield, & Nordgren, 2013). In a field study, savings appeals emphasizing responsibility for the future self increased retirement savings allocations among employees high in connectedness (Bryan & Hershfield, 2011). Some initial research has also suggested that other influences on farsightedness, such as social power (Joshi & Fast, 2013), short vs. long time focus (Lewis & Oyserman, 2015) and temporal markers (e.g., the start of a new month; Dai, Milkman, & Riis, 2015) may affect decision-making, at least in part, because of the effect on connectedness between the current (or past) self and the future self.

While this emerging literature has documented the potential influence of connectedness on a range of future-self-related decisions, less is known about how connectedness fits into a broader model of intertemporal decisions. An important next step is to identify reliable moderators and boundary conditions for these initial findings. Recent work on this question has demonstrated that whether people take into account the future consequences of a decision (e.g., alternative uses for unspent money) is distinct from connectedness, and considering those consequences may be a necessary condition for connectedness to influence decisions (Bartels & Urminsky, 2015).

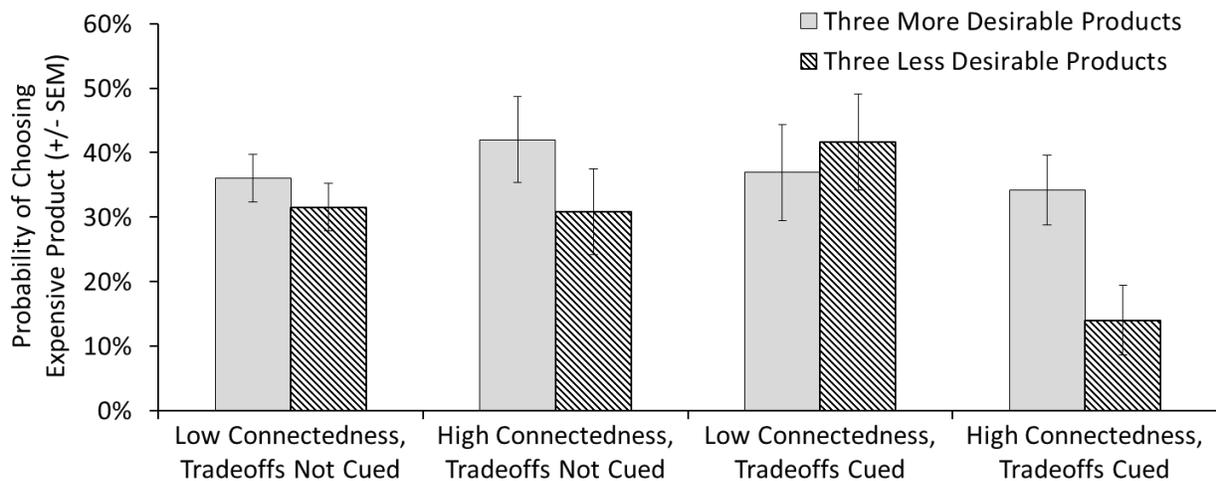


Fig. 2: The joint effect of connectedness and opportunity cost salience on the probability of choosing the more expensive option. In the “Tradeoffs Cued” (high opportunity cost salience) conditions, participants first ranked the items, highlighting the opportunity costs of purchasing . In the “Tradeoffs Not Cued” (low opportunity cost salience) conditions, participants made their choices before ranking items. Error bars represent standard errors of the difference score. Adapted from Bartels and Urminsky (2015).

In one study, manipulations of connectedness and of opportunity cost salience jointly affected participants’ choices between cheaper and more expensive products across a range of product categories. When participants were prompted to think about tradeoffs among purchases

(by first ranking the relative importance of product categories), those in the high connectedness condition were less likely to select the expensive versions, compared with participants in the low connectedness condition. This reduction was driven primarily by choices in the categories that participants considered less important (Figure 2). However, when participants were not initially prompted to consider tradeoffs, connectedness had no effect on their choices, presumably because they were less likely to consider the long-term consequences. Being high in connectedness can indeed reduce spending, but not in product categories that people desire the most, and not when people fail to incorporate the long-term consequences of their current spending choices.

## OPEN QUESTIONS AND FUTURE DIRECTIONS

Recent research has demonstrated that a better understanding of people's connectedness to their future self may help shed light on a broad range of decisions involving tradeoffs between present and future interests. While this represents an auspicious beginning, research is needed to better define the bounds of connectedness-based decision-making. To complement our growing understanding of situations in which psychological connectedness does influence decisions, future work should identify the decisions in which people do not incorporate considerations of connectedness to the future self (e.g., Bartels & Urminsky, 2015). Identifying when it is that connectedness does or does not motivate delay of gratification is particularly relevant.

Other psychological factors, including beliefs about the scarcity of future time and money, whether anticipated changes are positive or negative, how far away the future subjectively appears, uncertainty about future preferences, or the ways in which people think

about the future (e.g., as less emotional, or as more abstract) are relevant to how they make time discounting decisions (Urminsky & Zauberan, 2016; Zauberan, Kim, Malkoc, & Bettman, 2009). While these factors are distinct from connectedness (Bartels and Urminsky 2011), future research should explore how they may interact with connectedness to jointly impact people's perceptions, decisions and behaviors.

Although connectedness has been measured and manipulated in prior research, little is known about how people's subjective sense of connectedness is initially formed. Identifying antecedents of connectedness is a key question for future research. Prior experiences of either identity-disruptive change or of successfully incorporating change into one's identity, either for oneself or close others, may contribute to subsequently feeling more vs. less connectedness to the future self.

People's sense of connectedness to the future self may be either a holistic top-down sense of stability from which people form judgments of specific changes, or a bottom-up perception, constructed from multiple beliefs about the stability of separate aspects of the self. Some research on personal identity has investigated which characteristics people consider self-defining, as well as when change is welcomed and when it may be undesirable or disruptive (Oyserman and Markus 1990, Strohming & Nichols, 2014, Urminsky et. al., 2014, Yang & Urminsky, 2015). Recent findings suggest that people's beliefs about causal inter-relationships among different aspects of their identity impacts which changes would be more disruptive (Chen, Urminsky and Bartels 2016). Extending these approaches may be useful to understand how anticipated changes jointly shape connectedness and impact farsightedness.

Psychological connectedness to the future self may also be relevant to other kinds of decisions in which people's motivation stems from their future self. For example, while connectedness can conflict with present-based pro-social motives (Bartels et. al, 2013), people high in connectedness may be more motivated by legacy concerns, willing to invest not only in their own future self, but in the people (e.g, their children) and institutions that their future self is connected to. Further research is needed to better understand how our motivation to shape the future we will live in is influenced by our beliefs about the persistence over time of the identity that defines each of us as individuals.

## **Recommended Reading**

Bartels & Urminsky (2011). Tests how differences in connectedness across people affects time discounting.

Ersner-Hershfield, Wimmer & Knutson (2008). Tests how similar brain activation when thinking of the future self or others relates to time discounting.

Parfit (1984). Philosophical development of psychological connectedness.

Urminsky et al (2014). Cross-disciplinary review of research on the stability of identity.

Urminsky & Zauberman (2016). Reviews how time discounting relates to decision-making.

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## **Declaration of Conflicting Interests**

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