

INTRODUCTION TO THE SPECIAL ISSUE: TRANSLATIONAL RESEARCH ON DISCOUNTING

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Every day, people make choices between rewards available sooner and those not available until later, and between rewards that are more likely and those that are less likely to be obtained. Research on how people discount the value of later and less probable rewards has improved our understanding of choice and decision making, and as a result, delay and probability discounting have acquired a prominent status in a number of important areas, including behavioral and experimental economics, behavior theory, neuroscience, and decision theory, among others. Translational extensions—in which the discounting framework is applied to issues of clinical and practical significance—have begun to complement more theoretically driven investigations.

Even though our understanding of the fundamental mechanisms underlying discounting is far from complete, there already exists a body of knowledge that appears ready for application. Understandably, translational efforts have not advanced as quickly as basic knowledge. Nonetheless, there is now a substantial literature on differences in the degree to which different populations and clinically relevant groups discount delayed and probabilistic outcomes, for example, differences between those with substance-abuse problems and controls. It is essential, however, that research move beyond merely showing that there are differences in degree of discounting between populations or clinical groups if further advances are to be made.

For this special issue of *The Psychological Record: Translational Research on Discounting*, we sought manuscripts that emphasized innovation in the quest to understand how discounting principles might inform the study of real-world problems, and how real-world problems might inform the study of discounting. For example, the article by Weatherly, Plumm, and Derenne that opens the special issue, “Delay Discounting and Social Policy Issues,” uses a discounting framework to study decisions about social policy issues (e.g., affirmative action, abortion). Although delayed social policy outcomes were discounted significantly more steeply than delayed monetary rewards, factor analyses revealed that those who discounted monetary rewards most steeply also tended to discount social policy outcomes most steeply. Perhaps not surprisingly, discounting of delayed outcomes related to abortion and

gay marriage was somewhat independent of the discounting of other social policy outcomes (e.g., funding for child care and prosecution of perpetrators of domestic violence), with political party affiliation and regular church attendance playing a significant role. The results of this study highlight the potential usefulness of a discounting framework in examining attitudes toward social issues and also illustrate the challenges to be faced in such applications.

The study by Reed, Reed, Chok, and Brozyna, "The 'Tyranny of Choice': Choice Overload as a Possible Instance of Effort Discounting," concerns the choice overload phenomenon, in which having to choose among too many options is assumed to result in the depletion of "cognitive resources" and also increases subjective feelings of regret. Study participants considered scenarios in which they were to select a residential program placement for a student with a developmental disability. Participants chose between scenarios involving a limited number of placement options versus an extensive number of options. As the number of options for the extensive-choice alternative increased, preference for this alternative decreased hyperbolically. The authors suggest that choice overload may be better understood in terms of effort discounting and, as such, conceptualized within the hyperbolic discounting framework that has informed much recent work on choice and decision making.

In the article by Manwaring, Green, Myerson, Strube, and Wilfley, "Discounting of Various Types of Rewards by Women With and Without Binge Eating Disorder: Evidence for General Rather Than Specific Differences," Manwaring and her colleagues compare delay and probability discounting by obese women with binge eating disorder (BED) with discounting by other obese women and controls. At issue is whether these groups differ with respect to their discounting of all types of rewards, or whether they differ only in their discounting of food and sedentary activity. Overall, the BED group tended to discount both delayed and probabilistic rewards of all types more steeply than the other groups. These results suggest that, rather than having problems specific to particular types of rewards, women with BED are both generally more impatient and risk averse, suggesting that BED is associated with a general tendency toward steep discounting that cannot be accounted for by the concomitant obesity.

Charlton, Gossett, and Charlton, in their article entitled "Beyond the Shadow of a Trait: Understanding Discounting Through Item-Level Analysis of Personality Scales," go beyond previous efforts examining the extent to which delay discounting correlates with scores on personality tests. In addition to looking at correlations between delay discounting and overall scores on two tests, the Total Self-Control Scale and the Consideration of Future Consequences scale, the authors were able to identify which individual items on these tests correlated with discounting rates. As the authors note, this study represents a successful proof-of-concept that points the way to future empirical investigations of the relation between discounting and the actual behaviors tapped by self-report measures of personality, as opposed to examining the relations between discounting and personality constructs.

Foxall, Doyle, Yani-de-Soriano, and Wells also were concerned with the relation between delay discounting and self-reports on personality measures, but the focus in their article, "Contexts and Individual Differences as Influences on Consumers' Delay Discounting," is on whether delay

discounting reflects an underlying psychological trait or a domain-specific behavior. Consistent with previous research, they find that the steepness with which individuals discount monetary rewards, health outcomes, and vacation alternatives is domain specific and does not appear to reflect a general trait such as impulsiveness, nor is it related to individuals' cognitive style as measured by the Kirton Adaption-Innovation Inventory, a personality questionnaire used in studies of consumer behavior.

The article by Teuscher and Mitchell, "Relation Between Time Perspective and Delay Discounting: A Literature Review," also addresses the extent to which delay discounting captures a unique aspect of an individual's behavior. More specifically, these authors examine the degree of overlap between the concepts of delay discounting and time horizon (also known as future time perspective) and review studies in which both delay discounting and future time perspective have been measured. They conclude that, like steep discounting, a short time horizon is associated with a range of problem behaviors, including addictive disorders, risky behavior, poor school performance, and delinquency. Nevertheless, the few studies that allow a direct comparison between measures of time horizon and delay discounting suggest that the relation between the two constructs is relatively weak.

The special issue concludes with a book review by Weatherly and Dixon, "The Why Behind the Smaller, Sooner: A Review of Madden and Bickel's (2010) *Impulsivity: The Behavioral and Neurological Science of Discounting*." After summarizing each of the book's fifteen chapters, Weatherly and Dixon note that the assumption is often made (although not always explicitly stated) that discounting is a homogeneous phenomenon, yet there is evidence that suggests this assumption is not correct. Indeed, a number of the articles in this special issue address this important issue. Some address the related issue of the extent to which discounting differs from personality constructs like impulsiveness and future time perspective, while others consider the extent to which different types of discounting (e.g., delay and probability discounting), and even the discounting of different types of rewards (e.g., money and directly consumable rewards), reflect a single construct. These fundamental taxonomic issues are of obvious relevance to translational research on discounting, and indeed the success of future applications may well hinge on our understanding of how many "impulsivities" there are.

