DELAY DISCOUNTING

PSY310: Lab in Psychology

21st November 2024

Prerna Bhandari

AU2220191

Introduction:

A well-known psychological phenomena that examines how people choose between smaller immediate incentives and larger delayed rewards is called delay discounting. This paradigm has important ramifications for domains including behavioural economics, addiction, and mental health and explains impulsivity and self-control.

Research indicates that there are significant individual variances in delay discounting practices. For example, there is evidence that impulsive behaviours, addiction, and disorders like ADHD are associated with increased discounting rates, or the urge for instant gratification (Green & Myerson, 2004).Conversely, lower discounting rates, or a desire for delayed rewards, are associated with better long-term outcomes and increased self-control (Kirby et al., 1999). A delay discounting task developed in PsychoPy, a flexible software framework for psychological research, is used in this study.

Methods:

By analyzing how people balance smaller, delayed benefits versus larger, immediate ones, the experiment sought to explain human decision-making and provide insights into impulsivity and self-control.

The experiment aimed to assess the participants' sense of authority by giving them a choice between two reward options: one that is available right now and another that is available after a specific amount of time. The experiment, which included psychopy, involved four subjects, each of whom underwent 98 trials. A smaller prize was given right away, while a bigger reward was offered later. By considering what is best to have, the participants select their preferred mode. Following the completion of the exercise, the data was gathered using Excel, which documented the participant's various selections. By computing k by ((future\_reward/reward\_today)-1)/delay, the data was gathered.

Results:

The delay discounting rates or four participant were same as 0.0571. In the hyperbolic discounting model utilized to derive these values, it is evident that a higher k value indicates a stronger tendency towards immediate rewards rather than delayed rewards. According to the results, there appears to be minimal variation in the discounting rate between individuals, with all values grouped in a tight circle around the value of 0.057.As a result, it appears that the participants displayed a relatively uniform level of delay discounting behaviour across the group.

According to the results of the comparison of immediate and delayed rewards, the subjects displayed similar decision-making patterns, as indicated by the stability of the k values, in terms of decision-making patterns. These consistent responses may indicate that they were shaped by shared experiences and traits - such as demographic factors or similar exposure to situations requiring delayed gratification - that were shaped by common experiences or traits. It is difficult to investigate differences between individuals within this limited sample, due to the lack of diversity within the sample, because there is a lack of individual diversity within this sample.

Discussion:

This study established that the delay discounting rates were comparatively low, thereby indicating a fair predisposition towards the postponing of gains. Overall participants’ attitude appeared to be more or less rational, with equal aspects of self-restraint and instinct, recognition of long-term gains and short-term benefits. The values of k means that the participants sold belong to the same demographic or psychological type and the average k value 0.057.

As a result of this observed consistency, individual variations in delay discounting behaviour cannot be examined, which facilitates interpretation. Several studies have found that k values differ significantly across populations, with elevated values often associated with impulsivity and reduced values with patience and long-term planning (Green & Myerson, 2004). Nevertheless, several aspects may have contributed to the disparity in the observed outcomes: the small number of individuals in the sample or the selection of a correspondingly heterogeneous participants’ pool; thus, it remains advisable to uncover further opportunities to attract a more diverse and numerous pool of participants in subsequent studies.

From these findings, it can be understood that the task design identified in the study is sensitive. Perhaps participants found reward and delay options to be similar, and this could be why the k numbers were the same. For the future research it would be helpful to explore a greater variety of reward and delay levels in order to detect the slightest difference between respondents by varying the reward and delay levels.

Despite their modest level of delay discounting, the results limit their application when analysing differences in self-control or impulsivity because of their low variability. Study authors emphasize the importance of well-designed activities and diverse samples in understanding decision-making behaviours. The k parameter should be further examined as a measure of individual variations in impulsivity and self-control in future research.

References:

Green, L., & Myerson, J. (2004). A discounting framework for choice with delayed and probabilistic rewards. *Psychological Bulletin, 130*(5), 769–792. <https://doi.org/10.1037/0033-2909.130.5.769>

Kirby, K. N., Petry, N. M., & Bickel, W. K. (1999). Heroin addicts have higher discount rates for delayed rewards than non-drug-using controls. *Journal of Experimental Psychology: General, 128*(1), 78–87. <https://doi.org/10.1037/0096-3445.128.1.78>