

Individual differences in temporal and probabilistic discounting of costs

Summary of results, Stephen Jones, October 2007

Background

This study investigated how people subjectively evaluate delayed and uncertain costs as alternatives to immediate and certain costs. Similar studies evaluating rewards rather than costs have reported that:-

- The amount involved influences people's preferences
- This effect is inconsistent across temporal and probabilistic cases
- This suggests that we evaluate delay and chance as separate processes
- Correlation between personality and discounting behaviour is inconsistent

However, rewards are quite rare in real life and costs are much more frequent, as are opportunities to delay costs (through financial credit) and to manage risk (through insurance). Using costs rather than rewards, the following questions were posed:-

- What effect does amount of cost have on discounting behaviour?
- Is discounting behaviour related to personality or demographic factors?
- Do individuals tend to treat delay and risk in the same way?

Participants

A total of 213 people undertook the test and 153 completed it. This represents a completion rate of 72% which is much higher than normally expected for internet experiments. It also represents a relatively large and heterogeneous sample for this type of study. Some previous studies have worked with samples ranging from 20 to 30 participants, all of whom were psychology undergraduates. A larger and more diverse sample tends to yield more reliable results, from which generalisations may be made with greater confidence.

Findings

The study yielded the following observations.

- A strong correlation between discounting behaviour and three individual factors - immediate and certain costs are relatively favoured by (i) males, (ii) lower income groups and (iii) people who score high on the *agreeableness* personality dimension.
- Preference for immediate and certain costs increased with the amount of the cost.
- Individual behaviour is consistent across temporal and probabilistic cases - suggesting that a single cognitive process may be involved. This contrasts to the findings using rewards, and suggests that we treat costs and rewards differently.

These findings provide a base for further, more detailed investigation of the effects of other variables, such as the nature of the cost, and combination of delay and risk.