



Certainty and overconfidence in future preferences for food



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ARTICLE INFO

Article history:

Received 3 November 2014

Received in revised form 2 September 2015

Accepted 13 September 2015

Available online 16 September 2015

JEL classification:

D83

D84

PsycINFO classification:

3920

Keywords:

Preference uncertainty

Overconfidence

Experiment

Future preferences

ABSTRACT

We examine consumer certainty of future preferences and overconfidence in predicting future preferences. We explore how preference certainty and overconfidence impact the option value to revise today's decisions in the future. We design a laboratory experiment that creates a controlled choice environment, in which a subject's choice set (over food snacks) is known and constant over time, and the time frame is short – subjects make choices for themselves today, and for one to two weeks ahead. Our results suggest that even for such a seemingly straightforward choice task, only 45% of subjects can predict future choices accurately, while stated certainty of future preferences (one and two weeks ahead) is around 80%. We define *overconfidence in predicting future preferences* as: the difference between actual accuracy at predicting future choices and stated certainty of future preferences. Our results suggest strong evidence of overconfidence. We find that overconfidence increases with the level of stated certainty of future preferences. Finally, we observe that the option value people attach to future choice flexibility decreases with overconfidence. Overconfidence in future preferences affects economic welfare because it says people have *too much incentive* to lock themselves into future suboptimal decisions.

Published by Elsevier B.V.

1. Introduction

Rational choice theory assumes people maximize utility over time based on accurate predictions of future preferences. We make decisions for our future selves, ranging from retirement plans to upcoming vacations, buying a gym card and packing lunch before heading off to work. Our ability to predict future preferences may have important welfare implications. Future preference uncertainty means we risk making sub-optimal decisions for our future selves – our future selves may decide either to stick to the sub-optimal consumption decided by our past self, or spend resources revising the decision.

By keeping future choice flexibility, people may mitigate the potential negative welfare impact caused by preference uncertainty. For instance, Koopmans (1964), Kreps (1979), and Krishna and Sadowski (2014), use theoretical models to show that uncertainty of preferences (or “tastes”) causes people to value future choice flexibility. But what if it is our *beliefs* about future preference uncertainty that matters to our value of future choice flexibility? If people are overconfident in their ability to predict future preferences (i.e., overestimate the probability that the decisions made for future selves today will be optimal in the future), flexibility may be undervalued. Overconfidence in predicting future preferences may reduce welfare

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– future selves may either be forced to engage in consumption no longer desired, or spend resources to opt out from such consumption.

Herein we examine that notion by analyzing consumer certainty of future preferences, and whether consumers are overconfident in predicting their own future preferences. Further, we explore the impact of overconfidence in predicting future preferences on the option value to keep future choice flexibility for familiar goods. We design an experiment that focuses on snack choices today, for the future, and predictions made today about future preferences. Subjects also stated preference certainty for choices today and predicted future choices. Overconfidence is defined as the gap between the accuracy at which subjects were able to predict future preferences of snacks and subjects' stated certainty of future preferences for snacks. Subjects' preferences for flexibility is measured by their willingness to pay (WTP) for the option to, in the future, revise decisions made today about future snack choices.

We find that subjects express uncertainty of future preferences that is significantly higher than the uncertainty expressed for current preferences. Their stated certainty of future preferences, however, is substantially higher than the objective accuracy at which they predict their future preferences – we find strong evidence of overconfidence in predictions of future preferences. We also find that overconfidence has a strong negative impact on the value of keeping flexibility for future selves to revise decisions made today.

2. Literature review

We set the stage for our experiment by reviewing the related literature. Our study relates to three strands of literature – the literature on overconfidence, the literature on predictions of future preferences and the literature on preference uncertainty. These strands of literatures are extensive, and our review focuses on key papers as illustrative examples. Consider each strand in turn.

In our experiment, we define *overconfidence* as the excessive certainty about the accuracy of one's beliefs. There are other definitions. Moore and Healy (2008) disentangle the work on overconfidence and find that three definitions exist: (i) over precision (the focus of our study), (ii) overestimation of one's ability, control, or performance, and (iii) the belief that one is better than others. Overconfidence is also closely related to overoptimism, and sometimes the two concepts have been used interchangeably. Overoptimism has also been found to cause overconfidence (Van den Steen, 2004).¹

Since we focus on overconfidence as defined by over precision in our paper, we consider this specific literature in more detail. Evidence suggests that people are overconfident about the precision of their answers to knowledge questions and difficult forecasts (see e.g. Alpert & Raiffa, 1982; Klayman, Soll, Gonzalez-Vallejo, & Barlas, 1999; Lichtenstein, Fischhoff, & Phillips, 1982; Russo & Schoemaker, 1992; Soll & Klayman, 2004). Less is known, however, about people's overconfidence in *predicting own future preferences*. Vallone, Griffin, Lin, and Ross (1990) find that people do exhibit such future-preference overconfidence. They find that students are overconfident in predicting leisure activities, social engagements, their academic choices/outcomes, and future sentiments and feelings over the upcoming academic year. Dunning and Story (1991) found that both depressed and non-depressed people are overconfident about such predictions. Wilson and LaFleur (1995) found that people are overconfident in their predictions about their behavior toward an acquaintance. Pulford and Colman (1996) found that people were overconfident in their predictions about whether or not they would experience a range of events in the upcoming week. In contrast to our experimental design, these studies had subjects make complex predictions – subjects were primarily asked to predict events, where many predictions would involve considerations of others' behavior and external factors. The level of overconfidence found in these studies may be impacted by these considerations, since overconfidence has been found to increase with uncertainty (e.g. Hansson, Juslin, & Winman, 2008).

The idea of errors in predictions of future consumption has been explored primarily in the psychology literature. Simonson (1990) observed a “diversification bias” when he ran experiments in which students got to consume one snack per class over three classes. One subject group had to select all three snacks on the first day, while the other group selected their snacks each class period. The bias he observed was that the simultaneous choice group had substantially more variety in choice than the sequential group. Read and Loewenstein (1995) re-examined this result with new experiments. They found that people who diversified frequently regretted their choice when the time came to change to a new snack.

A substantial amount of work has also been devoted to errors in predictions of feelings. Incorrect predictions of feelings may cause incorrect predictions of future preferences, e.g. erroneous predictions of feelings have been found to impact consumer satisfaction (MacInnis, Patrick, & Park, 2005). In pioneering work on predictions of feelings over objects, Kahneman and Snell (1990, 1992) asked people to predict their liking over time of ice cream and yoghurt. On average, the ice-cream eaters correctly predicted the trend in their feelings—they enjoyed the ice cream less and less over the eight days. The yogurt eaters, however, ended up liking it more over time, which they had not predicted for themselves.

Loewenstein and Schkade (2003) have an insightful review on *why* people err when predicting preferences and feelings. They find that people err in predictions for three reasons. People do not know what will make them happy, there may be factors salient at the time of prediction that are no longer salient at the time feelings are experienced (e.g. due to a “focus

¹ Like with overconfidence, overoptimism in forecasts has been found to be highly prevalent in a range of areas, including events beyond one's own control (e.g., overoptimism in economic forecasts, see Alessi, Ghysels, Onorante, Peach, & Potter, 2014; Lansing & Pyle, 2015), and events (partly) controllable, such as future life events and one's future loan burden (e.g. Hoelzl, Pollai, & Kamleitner, 2009; Weinstein, 1980).

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