Overvaluation Bias in the Valuation and Utilization of New-Product Attributes

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Abstract

The present research examines the consistency between consumer valuation of a novel attribute prior to consumption and its subsequent utilization. Based on the research on dynamic inconsistency, we hypothesized that ex ante valuations would often exceed ex post utilization. A series of experiments were conducted to test this hypothesis and explore the causes of the bias. The results confirmed the hypothesized bias and ruled out inaccurate forecasts of future benefits of the novel attribute as a cause for the bias. Moreover, direct experience with the new attribute did not reduce the bias.

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Overvaluation Bias in the Valuation and Utilization of Novel Technological Attributes
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EXTENDED ABSTRACT
This research examines the relationship between consumers’ valuation of new product attributes and their subsequent utilization of those attributes. Although the literature on consumer response to product innovations is large, this issue has not been investigated empirically. We report the results from three laboratory experiments that provide strong evidence for an overvaluation bias: consumers often reveal a high willingness-to-pay for new product attributes that far exceeds the incremental benefit they can reasonably expect or actual obtain because consumers are averse to incurring substantial learning cost to take full advantage of the new attributes once they have them in their possession. In this research we examine the situation where the functionalities of the new and old attributes are independent of each and no combined usage is allowed.

Background
Two theories of dynamic inconsistency suggest that consumers may exhibit this overvaluation bias. The affective forecasting research has revealed the impact bias in a variety of contexts. It says that actual affective reaction to an event is typically less intense and of shorter duration than people expect in prospect. Since acquiring a new gadget is often a positive experience, people in prospect are likely to exaggerate the level of excitement they will experience as an owner, which results in a higher level of valuation of the new product than what their subsequent experience can justify. This overly optimistic expectation, once disconfirmed by actual experience, is likely lead to low usage.

The reference point shift theory provides a different explanation. It argues that valuation and usage decisions have different reference points because usage decisions receive immediate and unambiguous feedbacks, which induces greater myopia and risk aversion. This subtle effect of reference point change is hard to anticipate, leading to inconsistency between valuation and utilization behaviors.

Empirical Investigation
Three experiments were conducted where participants played a novel computer game. A total of nearly three hundred undergraduate business students participated in the studies and received monetary reward based on their performance in the last fifteen games (money rounds).

In study 1, participants first trained on one type of controls (basic version) for fifteen games (training rounds) and then were offered the opportunity to buy a new game (combo version) that had new set of controls whose performance was unknown, in addition to the existing controls. Participants’ WTP for the new game were measured via BDM procedure. Depending on their WTP, they continued to play the new game or the existing one for another fifteen games (money rounds). Study 1 manipulated the availability of the new game to test whether WTPs for the new game were excessive in light of their subsequent usage and performance. Study 2 followed the same procedure and collected explicit forecasts prior to WTP measurement to test the two competing explanations. Study 3 examined the effect of direct experience with the new attribute on overvaluation bias. It reversed sequence of games that participants played (combo version followed by basic version) and elicited WTA for trading away the controls they used less frequently.

Results
Across the three studies, the results provide converging evidence for the hypothesized overvaluation bias. Specifically, participants indicated a high level of WTP (M=384 for study 1 and M=349 for study 2), but their subsequent usage of the new control was rather low, compared to what might be implied by their WTP. Though their subsequent performance improved, their improvement fell short of the level that was achieved by those participants who did not have the opportunity for acquiring the new game (difference in improvement: M=-100 for study 1 and M=-458 for study 2). Thus, it appears that their WTP far exceeded the incremental value of the new attribute (i.e., difference in improvement).

The forecasts results from study 2 did not find support for the impact bias explanation. Specifically, forecasts of future performance with the existing and new games were not overly optimistic, nor were forecasts of future utilization of the new controls in an initial set of games. This is contrary to the predictions of the impact bias explanation, and may indicate some indirect support for the reference point shift explanation.

Study 3 found that participants demanded excessive compensation for trading down to a simplified set of controls (M=455), even when they had never used the controls to be traded away in fifteen games. A variation replicated the procedure of study 2 but allowed two free trials with the new game before WTP measurement. The results showed a similar level of WTP, but even lower level of usage rate of the new controls after they were acquired.