Tradeoffs in the Dark: the Effect of Experience on Extrapolated Consumer Preferences

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The dynamics of how consumers use preference knowledge gained over one range of product-attribute levels to predict their preferences for new attribute combinations is explored. Data from six studies supports a hypothesis that as judgmental experience in a core domain grows the process of predictive inference evolves from a reliance on meta-cognitive “guessing” rules to exemplar-based rules and finally to functional prediction rules. It was found that consumers often underestimate the utility of novel product combinations that are superior to familiar options and over-estimate the utility of inferior options. The boundary conditions are explored in terms of the depth of prior judgment experience and the form of the “true” affective response policy.

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SESSION OVERVIEW

Many product-purchase decisions are driven less by what consumers feel about products in the present and more by what they imagine they will feel about them in the future. When buying furniture, for example, consumers typically try to mentally visualize how a piece will look when placed in their home or apartment, and then forecast the pleasure they will experience upon seeing it in this new context. Likewise, the purchaser of a new cellular phone tries to imagine what it would be like to use its novel features and how difficult they will be to learn—and the affective reactions these different experiences might trigger. How do consumers go about constructing such visualizations, and how accurate are the resulting affective forecasts? The answer to this question is far from fully known. On the one hand, there is a growing body of research that shows that affective forecasts are often prone to systematic biases, such as a tendency to predict that what is felt in the present (such as a product’s appeal in a showroom) will be a good predictor of what will be felt about it in the future. On the other hand, the boundary conditions of these findings—particularly when applied to consumer-judgment contexts—are not well understood, and comparatively little work has investigated how consumers construct complex mental visualizations of future product experiences that form the basis of such forecasts.

The purpose of this session is to report the findings of recent research that has sought to close this knowledge gap. The four papers touch on different aspects of the general study of product imagination and forecasting; how consumers go about building mental representations of product consumption experiences that lie in the future, the accuracy of these representations, and how correctable forecast errors are both by consumers and firms.

The opening papers by Wood and Huang and Meyer report new findings on the structure and accuracy—the internal models that consumers use to form inferences about products that are unfamiliar generalizations of existing offerings. The final two papers by Zhao, Dahl, and Hoeffler and Easwar and West examine corrective issues in affective forecasting. Zhao, Dahl, and Hoeffler take up the issue of how to best design visualization aids to aid consumers overcome affective forecasting biases, while Easwar and West look at the effectiveness of perhaps the simplest of all corrective devices: educating consumers about the existence of biases.

Taken together, the session is designed to provide an integrative overview of new research aimed at enhancing our understanding of the process that underlies consumer affective forecasts as well as methods by which these forecasts can be improved. The concluding discussion will then have the goal of suggesting a research agenda for future work in the area.

EXTENDED ABSTRACTS

“Change versus Comfort: How Consumers Mis-Predict Their Openness to Innovation”

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Many can relate to desiring dearly familiar products in an unfamiliar or changing landscape. This phenomenon is so common in culinary practice that we have a term—comfort food—that encompasses the soothing function of our long-time favorites. One can argue that this practice goes beyond food; consumers may believe that they will prefer favorite movies, familiar music, and habits (e.g., smoking, a daily jog) when surrounded by changing life factors. Like other consumer coping strategies, consumers may believe they will choose familiar things in times of change because familiar choices minimize the cognitive/emotional load engendered by a new environment; a lay theory reinforced through external norms and internal cues. However, recent research on mindsets and habits offers a competing prediction. Changing circumstances may break habitual cues that favor old favorites and promote a general ‘change mindset.’ This underlying openness to change may prompt choices counter to the “comfort” theory, creating a paradox in which consumers’ actual choices are opposite to what they predict.

Study 1. In study 1, 203 American participants were offered the following choice during an experimental session with several unrelated studies:

“Potato chips are a favorite American snack. They are also a favorite British snack, but in England, potato chips as we know them are called “crisps.” Crisps come in many of the same flavors that we have in American stores, but are also available in flavors that are not common here. Flavors like Sea Salt, Cheese & Pickle, Thai Chili & Lime, Smoky Wiltshire, Bombay Mix, and Camembert & Plum are very popular. Two people from this study will be selected to win a prize pack of a variety of either British crisps or American chips. If you win, which prize pack do you want? Choose below by checking one box below: [Two boxes appeared here—box showing a selection of American (Lay’s brand) chips and the other showing a selection of British (McCoy’s brand) crisps]. The prize pack was described in the box as a selection of 6 full-sized bags of chips/crisps.]”

Later (after several unrelated tasks, ~30-40 minutes), participants received several surveys, including five Likert items that assessed participants’ perceived personal level of “life change,” (e.g., “There has been more upheaval than usual in my life this month”). Responses were summed and participants were divided into two groups, High-Change and Low-Change, based on a median split of this index. It was hypothesized that consumers experiencing more change would be more likely to choose the British crisp than the American chip. Consistent with this, a significant Pearson chi-square analysis ($\chi^2=4.11, p=.04$) showed there was higher selection of the unfamiliar British crisp option for High-Change participants (M=57.4%) than Low-Change participants (M=42.6%) and higher selection of the familiar American chip option for Low-Change participants (M=56.8%) than for High-Change participants (M=43.2%).
Study 2. Study 2 was a prediction study. Participants were asked to consider two peers experiencing different levels of life change and to predict what choice these target others would make if given the same “chips or crisps” scenario from study 1. It was hypothesized that participants would predict (opposite to choices observed in study 1) that high-change others will choose the familiar option and low-change others will choose the unfamiliar option. Further, when given an opportunity to explain their prediction, it was hypothesized that participants would refer primarily to strategies congruent with a comfort-food lay theory. Consistent with this, 26.8% of participants predicted that Taylor (High-Change) would choose the British crisps and 73.2% predicted s/he would choose the American chips (median/modal response). Conversely, 59.8% predicted that Brook (Low-Change) would choose the British crisps (median/modal response) and 40.2% predicted s/he would choose the American chips (?2=56.26, p<.001). The cognitive response measures (coded by two independent raters) indicated that participants offered reasons consistent with coping-oriented strategies that fit with a comfort food lay theory.

Studies 3–5. Studies 3–5 replicate the effect and further explore consumers’ forecasts of their future preference for comfort versus change. Study 3 demonstrates that the effect extends to non-food situations (choice of a range of new or unfamiliar products). Study 4 demonstrates that this effect occurs primarily when choices are characterized by low involvement. Study 5 demonstrates that choice of new options can be increased by manipulating perceived life change.

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Many choices require consumers to extrapolate preferences formed in one domain of experience to an unfamiliar new one. Examples include decisions to adopt new goods or services, or judgments of the potential attractiveness of novel product-attribute combinations. While there has been considerable work investigating such related problems as inference formation and behavior in prediction tasks, less is known about either the process individuals use to make trade-offs among unfamiliar ranges of attributes or the algebraic structure of such trade-offs.

The goal of this work is to investigate dynamics of how consumers use preference knowledge gained over one range of product-attribute levels to predict their preferences for new attribute combinations. Prior work has suggested that given the limited direct experience in consuming products, predictive inferences may involve a blend of two processes: exemplar-based and rule-based. Exemplar-based policies are those that forecast utilities for new stimuli based on the experienced utility of similar options (Juslin, Olsson, and Olsson 2003; Meyer 1987), and rule-based policies are those that exploit generalized beliefs about the functional relationship between attribute values such as monotonicity and additivity (Delosh, Busemeyer, and McDaniel 1997). In this project, we focus on two central research questions: 1) how does the use of these two processes (exemplar-based or rule-based) evolve as consumers develop judgmental experience in a product category; and 2) what does the answer to (1) imply about the likely accuracy of consumers’ hedonic forecasts for unfamiliar product-attribute combinations?

Central to the work is a hypothesis that the prevalence of each process will evolve over time as experience in a core judgment domain grows. Specifically, given limited experience predictions will rely on meta-cognitive “guessing” rules that make no attempt to utilize what has been observed about product values in a core domain. As experience grows, however, knowledge gained in the core domain will be increasingly utilized, first by using exemplar-based prediction rules that draw analogies between novel products and previously-viewed ones, then by using functional prediction rules that exploited learned continuous associations between attribute levels and valuations. One of the consequences is that consumers will be prone to under-estimating the utility they will draw from novel product combinations that are objectively superior to familiar options and over-estimating the utility they will draw from inferior options. The magnitude of these errors, however, is also hypothesized in some cases to be U-shaped, where decision makers with virtually no experience at all in a judgment category may be able to provide more accurate utility predictions in novel domains than those with moderate amounts of experience.

We tested these hypotheses in six studies where participants acted as agents to learn to predict a target customer’s apartment preferences based on four attributes: travel time to work, apartment appearance, security of apartment location, and rent. Three initial studies explored the nature of extrapolation judgments when decision makers have reasonably high levels of judgmental experience in a given setting, and are asked to predict that likely utility of options that have systematically superior or inferior attribute values. Here we found asymmetric support for the predicted over-and-underestimation bias: when participants were asked to predict the likely attractiveness of a novel apartment, they over-estimated the likely value of inferior options, but were accurate in their hedonic forecasts for superior ones. In contrast, when participants were asked to predict the unattractiveness of an apartment, participants under-predicted the attractiveness of superior options. Studies 4 and 5 explored the boundary conditions of these prediction biases based on the amount of prior judgmental experience and the underlying “true” utility-generating rule. As predicted, the forecasting bias was most pronounced among participants with moderate amounts of judgmental experience (Study 4) but this advantage of little experience vanishes when the underlying composition rule is a complex one unlikely to be naively guessed (Study 5).

Direct evidence of the hypothesized evolution of inference strategies was provided by a sixth study where at periodic junctures of the prediction task participants were asked to type a written description of the process they had used to make the previous judgment, and these statements were content-analyzed. Consistent with the hypothesized strategy evolution, statements gave strong evidence of a use of generalized principles when direct experience was limited, exemplar-based strategies when experience was moderate, and rule-bases strategies when experience was more extensive.

“Matching Time Perspective and Visualization Aids to Enhance New Product Evaluation”
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Darren Dahl, University of British Columbia, Canada
Steve Hoeffler, Vanderbilt University, USA

How will visualization aids impact new product evaluation under a retrospective versus an anticipatory perspective? In the new product domain, the common wisdom is that imagining the usage of a new product in a future scenario leads to higher evaluations than relating it to a past experience (Dahl, Chattopadhyay, and Gorn 1999). In our work, we draw on research on retrospection and anticipation in terms of people’s natural mental construal and use these results to propose different effects of visualization aids for retrospective and anticipatory visualization.
Existing work on retrospection and anticipation has indicated that past events are generally construed as more detailed and concrete whereas future events are construed as less detailed and more abstract (Van Boven, Kane, and McGraw 2008). At the same time, existing research on consumer decision making over time has demonstrated that the type of information had the greatest impact on evaluation when it fits consumers’ natural mindset in terms of construal levels (e.g., high-level information such as feature upgrade had a larger impact on consumers’ purchase intention for a distant future decision where consumers’ natural thoughts were at a higher level, whereas low-level information such as coupon had a larger impact on purchase intention in the near future where consumers’ natural thoughts were at a lower level (Thomas, Chandran, and Trope 2007). Based on these previous findings, we predict that a match of the construal levels between visualization aids and temporal perspective would increase the evaluation of new products. Since people’s natural mental construal for the past tends to be concrete, we hypothesize that concrete visualization aids will be more effective in increasing new product evaluation for retrospective visualization. However, since people’s natural mental construal for the future tends to be abstract, abstract visualization aids will be more effective in increasing new product evaluation for an anticipatory visualization. In addition, we predict a reversal of this pattern when people’s natural temporal perspective is reversed.

We test our hypotheses in three experiments. In all three experiments, the key constructs that we manipulated were level of concreteness of the visualization aids and temporal perspective of the visualization. To manipulate temporal perspective, we asked participants to either relate the target product to a past or future scenario. In terms of level of concreteness of the visualization aids, different operationalizations were used across the three experiments.

In experiment 1, a mock advertisement of a Tablet PC was used as our stimuli. We manipulated concreteness level by providing participants with either usage process-related aids (i.e., how to use this new technology) as concreter aids or benefit-related aids (i.e., why adopting this new technology) as abstracter aids (Liberman and Trope 1998; Vallacher and Wegner 1987, 1989). The results fully replicated our findings in experiment 1.

In experiment 2, we used a new technology (Tap & Go PayPass) as our stimuli. We manipulated concreteness of visualization aids by providing participants with either usage process-related aids (i.e., how to use this new technology) as concreter aids or benefit-related aids (i.e., why adopting this new technology) as abstracter aids (Liberman and Trope 1998; Vallacher and Wegner 1987, 1989). The results fully replicated our findings in experiment 1.

In experiment 3, we manipulated the concreteness of visualization aids by providing the same sample activity of using a Tablet PC, but describing it with lots of details in the concrete conditions, and describing it with very general wording in the abstract conditions. However, in this experiment, we shifted people’s natural construal level by instructing them to think more abstractly for the past and more concretely for the future. If the match of the construal levels was the key driver of our results in experiments 1 and 2, the effects that we observed in experiments 1 and 2 should be reversed after we shifted the natural construal level. Indeed, we found that abstract visualization aids increased retrospective evaluation and concrete visualization aids increased anticipatory evaluation after the natural construal level was shifted.

Our work contributes to recent research on visualization and new product learning by demonstrating the importance of the match between the specificity of the visualization aids and temporal perspective on new product evaluation.

“The Interactive Effect of Affective Forecasting and Mood on Performance and Product Goals”

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Many consumer decisions involve the setting of future goals. People join gyms with the goal of losing twenty pounds, buy musical instruments hoping to learn to play them, and buy new phones expecting an easier and more pleasurable calling experience (Oslavsky and Miller 1972). These goals are driven by various motivations, including our desire to maintain a positive mood. The mood-maintenance hypothesis (Isen 1983) states that we engage in activities that ensure positivity. Given that goals divide outcomes into successes and failures, mood maintenance contends that we set goals we expect to surpass. However, people often commit affective forecasting errors (AFEs) by overestimating the future pain of failure and pleasure of success—potentially leading consumers to set inappropriate goals for themselves or during product related decisions (Kermer 2006). The following experiment examines how providing consumers with AFE knowledge influences their desire to engage in mood maintenance and goal-setting.

In study one, two factors are manipulated: AFE knowledge and mood. AFE knowledge was manipulated through passages that stated that the AFE is an overestimate of the impact of positive outcomes, an overestimate of the impact of negative outcomes, or a control passage. To manipulate mood, subjects elaborated on a good or bad experience. In the neutral mood condition subjects were given no elaboration task. Finally, in an ensuing anagram task, subjects set an anagram performance goal.

Subjects in a positive mood will engage in mood maintenance and set lower goals than those in a negative mood. However, this mood maintenance motivation can be removed with knowledge of the AFE. This knowledge removes the fear of losing positivity and frees people to set high goals. In a positive mood, we focus on preventing affective loss; therefore, knowledge of the AFE as affective gain overestimation will neither be relevant nor impact goals. Only under certain conditions will AFE knowledge enable subjects to set higher goals.

There were no significant differences between the different neutral mood conditions; therefore, they were pooled into a control condition. A 3 X 2 ANOVA revealed a significant interaction (F(2, 262)=4.17, p=.016). It was found that, in a positive mood, subjects exhibited mood maintenance, setting lower goals to ensure success (Mpositive mood, no AFE knowledge=25.2, Mnegative mood, no AFE knowledge=30.8, Mcontrol=30.7, t(391)=2.12, p=.02 and t(391)=2.32, p=.01, respectively). However, if told the AFE was an overestimation of negative affect, subjects knew a failure would not be devastating and set higher goals than with no knowledge (Mpositive mood, negative AFE knowledge=34.5, Mpositive mood, no AFE knowledge=25.2, t(391)=3.31, p<.001). Subjects in the positive AFE passage condition set lower goals than the negative AFE passage condition (Mnegative mood, negative AFE knowledge=34.5, Mpositive mood, positive AFE knowledge=25.1, t(391)=3.32, p<.001), supporting the hypothesis that those engaging in mood maintenance focus on preventing loss.

While study one focuses on performance goals, these effects can also apply to the expectations we have for products. We often make product evaluation forecasts; how we think we will feel about the product (Zhao et al. 2009, Wood 2009). Knowing our AFE tendencies, we may realize that most products are satisfying and few overwhelm. We need neither the tiniest camera nor the loudest...
speakers to be happy and one weakness should not ruin product evaluations. Future studies plan to explore how the AFE influences product goals, not just performance goals.

Mood can affect our desire to engage in product exploration. One can easily imagine how exploring a product, with difficult menus, infinite settings and peripheral features can lead to frustration. In this light, the anagram task could be considered a simplified product exploration task; both are time consuming, non-linear processes. Fearing frustration, we may engage in mood maintenance and not explore our product fully. Knowing our mood state is safe, might remove this fear of exploration. And often, the nuances we find are what make us truly pleased with our products.

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