Forecasting and Backcasting: Predicting the Impact of Events on the Future

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Consumers may predict the future impact of a hedonic consumption event (e.g., a hedonic experience or purchase) by forecasting (i.e., imagining how the event will make them feel when it happens, then considering how those feelings might change over time) or by backcasting (i.e., imagining their usual feelings in a future state, then considering how different those feelings might be were the event to happen). Four studies show that backcasters produce different hedonic predictions from forecasters and consider important characteristics of the future that forecasters tend to ignore. A simple primacy or recency explanation is insufficient to explain these findings.

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The second study varied the valence of the anticipated experience. Participants were asked to listen to the noise of a vacuum cleaner for 50 seconds and either expected that this would be followed by 10 seconds of pleasant piano music (as in the study 1) or 10 seconds of an annoying drilling sound. As expected, real-time ratings revealed that participants perceived the vacuum noise as more irritating when they anticipated the piano music than when they anticipated the drilling sound. Furthermore, when they anticipated the piano music, the vacuum noise became more irritating over time (as they got closer to the piano music), whereas when they anticipated the drilling sound, the vacuum noise became less irritating over time (as they got closer to the drilling sound). The retrospective measures provide further convergent evidence. Participants who anticipated the piano music rather than the drilling noise, evaluated the vacuum noise as more irritating, were more likely to prefer to switch to another annoying sound, and were willing to pay more to avoid the vacuum sound. These last two measures also provide evidence against a re-scaling explanation.

In the third study, we examined whether the opposite effect would occur for positive experiences: do positive experiences become more enjoyable when you anticipate that it will be followed by a negative experience? We asked 151 participants to listen to a pop song. Half of the participants were asked to listen to 60 seconds of the song, whereas the other half of the participants were asked to listen to 50 seconds of the song, followed by 10 seconds of annoying guitar feedback. Participants who expected the annoying guitar feedback provided more favorable real-time ratings of the song and were willing to pay more for a concert by that artist.

Although the observed pattern is consistent with the existence of prospective hedonic contrast (i.e., contrasting your current affective experience to an anticipated experience), we are still considering some plausible alternative accounts. In the negative domain, it is possible that the anticipation of more favorable future experiences prevents us from activating our psychological immune mechanisms (e.g., adaptation) which mitigate the unpleasantness of the current experience (Gilbert et al. 2004). In the positive domain, on the other hand, the expectation of a negative change may encourage consumers to extract more positively utility from their current experience. We are currently running studies to distinguish between these explanations and prospective hedonic contrast.

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Consumer research has begun increasingly to explore the effects of anticipated affect on decision-making, i.e., affect that consumers expect to feel in the future post-choice (see MacInnis, Patrick, and Park (2005) for a recent review). While this research has shown that consumers can spontaneously use hedonic predictions in consumption decisions, and are influenced by their hedonic predictions in both the choices they make and how they feel about their consumption experiences, little attention has so far been paid to understanding how and when hedonic predictions are made and how they may be altered or induced. This is especially surprising given the potential importance of hedonic predictions for a broad range of consumer behavior (such as consumer preference, behavioral intentions, consumer satisfaction, brand loyalty and repeat purchase) and the now well-established finding that people are not very good at making hedonic predictions. The present research examined and compared two methods, forecasting and backcasting, by which consumers may predict their feelings in the future following a hedonic consumption event, such as a baseball game or a jewelry purchase.

How often have we heard that “time heals all wounds” or “someday this will all be but a distant memory”? Both of these adages help us recognize that events will have less impact in the future than we might otherwise believe, but they also represent two different ways of thinking about the hedonic impact of an event. The first adage reminds us that our present feelings will decrease with the passage of time, whereas the second adage assures us that our future states will be relatively uninfluenced by the events that precede them. For example, if I want to understand how I will feel on my birthday next month if I see the Red Sox lose today, “time heals all wounds” encourages me to forecast my future feelings by first considering my response to this event (“I’ll be very unhappy if the Red Sox lose today”) and then correcting for the passing of time and circumstances (“...but I’ll probably feel better on my birthday by the time it rolls around next month”). On the other hand, “someday this will be but a distant memory” encourages me to backcast my future feelings by first considering my usual feelings in a future state (“I’m going to be so happy at my birthday party next month”) and then correcting for the occurrence of the event and for the passing of time (“...and if the Red Sox lose today it shouldn’t make much difference by then”).

Forecasting and backcasting are logically identical methods for consumers to predict their future hedonic states after an impacting consumption event: in both cases a consumer ends by making the same prediction, of his or her feelings in a particular future state given the occurrence of an earlier consumption event (e.g., “How will I feel on my birthday if the Red Sox lose today?”), and in both cases the person has and can use precisely the same information. Nonetheless, the two methods reverse the order in which information about feelings in a future state (i.e., how I usually expect to feel on my birthday) and information about the impacting consumption event (i.e., the Red Sox loss) are considered, and although the order of information makes no logical difference in a computation such as this, decades of research has shown that the order in which information is considered can make a large psychological difference.

In four experiments we determine (a) whether backcasters and forecasters make different predictions about the impact of events on their future feelings, (b) whether they consider different kinds of information when making these predictions, and (c) whether predictors who are not guided spontaneously may use forecasting or backcasting to make such predictions.

In studies 1 and 2, respondents were guided to make forecasts, backcasts, or were unguided, and we measured how much impact they thought an event would have on their future feelings (addressing a and c above). In studies 3 and 4, we examined the kinds of information that forecasters and backcasters (and, in study 3, unguided respondents) used (addressing b and c above). In study 3, respondents rated the extent to which they considered the impacting event, their future state, and the elapsed time, and in study 4, we manipulated information about the impacting event, their future state, and the elapsed time. These two studies tell us whether forecasters and backcasters use information about their futures differently in their predictions, and provide us with some evidence on how forecasters and backcasters combine this information to make their predictions.

The data across four studies consistently supported three conclusions. First, backcasters and forecasters make different predictions from the same information. Specifically, backcasters’ future impact predictions are more strongly influenced by the nature of the impacting event and their usual feelings in a future state than are forecasters’ predictions. Second, backcasters and forecasters consider different kinds of information. Specifically, backcasters consider the nature of the impacting event and the
future state more than forecasters do. Third, when people are not
guided to use one or other of these methods, they tend to make
predictions and consider information as backcasters do. A simple
primacy or recency explanation is insufficient to explain these
findings.

“How We Don’t Learn to Accurately Forecast Our Feelings:
How the Misremembering of Our Predictions Blinds Us to
Our Past Forecasting Errors”
Rebecca K. Ratner, University of Maryland
Tom Meyvis, New York University
Jonathan Levav, Columbia University

Why do people persist in making erroneous affective forecasts
(e.g., Gilbert, Pinel, Wilson, Blumberg and Wheatley, 1998;
Novemsky & Ratner, 2003)? We present the results of several
studies that suggest that this persistence is partly caused by people’s
biased recollections of their initial predictions. Individuals who
experienced a negative event (e.g., Kerry supporters following the
2004 presidential election and Philadelphia Eagles fans following
the 2005 Super Bowl) were less upset than they had predicted and
misremembered this prediction as less extreme than it actually
was, thus obscuring the fact that they had made a forecasting error.
Similarly, individuals who experienced a positive event (e.g., UNC
students following their men’s basketball team’s appearance in the
Final Four) also recalled having made less extreme predictions than
they had originally indicated. Interestingly, although participants’
memories were inaccurate for affective forecasts relating to the
Final Four, their forecasts about winning the championship were
quite accurate. This suggests that people’s memories for their
affective forecasts may be better for unusual, extremely positive
events than for unresolved, more emotionally-ambiguous events.
Furthermore, even when individuals were able to accurately recall
their affective forecasts, they did not spontaneously bring these to
mind, and thus did not learn from the discrepancy between their
affective forecasts and their actual experience unless prompted to
do so.

We find that when we confront people with the fact that their
initial forecast was wrong, they make less extreme predictions in a
similar situation in the future. After a real-time experience that
disconfirmed their initial affective forecast (i.e., not experiencing
as strong context effects as participants’ expected when eating liked
and disliked jellybeans, following Novemsky and Ratner 2003),
people misremembered their initial affective forecasts as having
been less extreme than they actually where. Respondents who were
reminded of these actual, extreme initial forecasts showed more
learning (i.e., made less extreme predictions for a similar, future set
of experiences) than those who were not reminded of what their
initial predictions had been. This indicates that learning is indeed
impeded when people do not realize that their initial affective
forecasts did not match their real-time experience.

In another study, we extend our investigation to the planning
fallacy and find that students also misremember predicted comple-
tion times for class assignments as less optimistic than they actually
were. Furthermore, students who were asked to recall their pre-
dicted completion times before making a second prediction, made
less optimistic second predictions than those who were reminded
of their prior predictions or those who only recalled their prior predictions afterwards. In fact, those students who made the largest
recall errors tended to have the least optimistic second predictions.
This suggests that people may sometimes perceive their prior
predictions as more diagnostic than their prior behavior, leading
them to anchor on their recalled prior predictions when formulating
a prediction for a new, similar task. Note that this is consistent with
previous theorizing that the persistence of the planning fallacy is in
part caused by people perceiving their past failures as nondiagnostic
for their present predictions—since they ascribe these failures to
idiiosyncratic obstacles that were specific to that past situation.

In sum, these studies indicate that one of the reasons for the
persistence of forecasting errors is people’s tendency to systemati-
cally misremember their predictions. We often recall our predic-
tions as being closer to the actual outcome than they in fact were.
This recall error creates the illusion that we did in fact accurately
predict the outcome (or that our misprediction was less severe than
it actually was), thus reducing the perceived need to learn. How-
ever, these studies also suggest some boundary conditions for this
phenomenon. First, we do not always misremember our predic-
tions. For instance, predictions regarding exceptional events tend to
be recalled more accurately. Second, even when we systematically
misremember our prediction, this may sometimes facilitate, rather
than impede learning. For instance, when we use our recalled prior
prediction as an anchor for our future predictions, recalling this
prediction as being closer to reality will provide a more realistic
anchor, and thus a more appropriate basis for our future predictions.
Together, these results indicate that a systematic bias in memory for
past predictions contributes to the persistence of forecasting errors.

“How Predictions Differ from Actual Adaptation to Durable
Products”
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Many consumer purchases involve items for which consumption
extends over a long period of time and decisions to purchase
such products depend critically on predictions about how the
experience with these products will unfold over time. For example,
the decision to purchase a sunroof in a new car depends on whether
one believes that it will provide little enjoyment after 6 months. Are
consumers able to accurately predict this at the time of purchase?
Clearly the ability to predict enjoyment with a product over time is
important for many decisions. Failures in predictions of how utility
from a product unfolds over time can result in repeated dissatisfac-
tion with purchases or lack of repeat purchase of worthwhile items.

There is a growing body of research on predictions about how
consumers will feel in the future in particular circumstances or
following particular events. This research has examined many
possible influences, including the weather, various health condi-
tions, being denied tenure, having your favorite candidate win an
election, etc. For example, Schkade and Kahneman (1998) found
that individuals overpredicted the effect that weather would have on
their well-being, thinking that Californians would be happier than
Midwesterners. One key mechanism for this and many other
mispredictions seems to be a focusing illusion (Schkade and
Kahneman 1998) whereby individuals focus disproportionately on,
and thus exaggerate the importance of, things that would change
in the future while ignoring things that would remain the same when
making predictions about overall happiness in the future. In actual
experiences, individuals pay less attention to any one particular
circumstance because they are busy fulfilling the demands of
everyday life. A second explanation for misprediction of future
happiness is that people may fail to appreciate the speed and extent
to which they will emotionally adapt to changes in life circum-
stances (Gilbert et al., 1998; Loewenstein & Frederick, 1997). In
light of these two major explanations for the gap between predicted
and experienced happiness, past research has shown that drawing
attention to focusing illusions or emotional adaptation might im-
prove the quality of hedonic prediction about long-term emotional
impact of certain events (Ubel, Loewenstein, and Jepson, 2005).
The present research differs from this existing affective forecasting research in one important way: the present studies examine happiness with a particular product over time rather than general happiness or well-being. Our measures of predictions and experiences are focused exclusively on the target item, and therefore are not subject to the documented effect of overweighting one event or dimension in considering total well-being.

Our first study examines how predicted enjoyment compares to actual enjoyment for a durable hedonic product. Participants were either given the product to take home (experience condition) or presented with a picture and detailed description of the same product (non-experience condition). Participants assigned to the experience condition either reported their current enjoyment after 1 day or 7 days with the product. Participants in the non-experience condition made predictions about enjoyment after either 1 day or 7 days with the product. We found a substantial reduction in actual experienced enjoyment with the product over time, and yet participants failed to anticipate this downward trend in future enjoyment without a first-hand experience with the product. This failure in predicting adaptation prior to experience with the target product might help explain why intuitive knowledge or past experience of adaptation often fails to curb the desires for new products, especially novel hedonic products, that consumers have yet to experience.

In our second study, we examined how predicted enjoyment compares to actual enjoyment for consumers who have gained some experience with a product. All participants in this study were given a product to keep and were assigned to either a 1-day or 7-day condition. One-day participants were asked to report their current enjoyment after one day with the product and to predict how they would feel about the product on day 7. Seven-day participants were asked to report their current enjoyment on day 7. The hedonic measure again shows that enjoyment is declining over time. Interestingly however, after owning the product for one day, participants largely overpredicted adaptation to the product, i.e., 1-day participants anticipated their enjoyment of the product to be much lower on day 7 than what the 7-day participants actually experienced. It is possible that once participants get to experience a product, they focus too much attention on how they are going to use or play with the product, overpredicting the usage frequency when making predictions about their future enjoyment and hence conclude that its novelty will wear off sooner than it does.

In study 3, we borrowed a defocusing manipulation from Wilson and colleagues (Wilson et al. 2000) to examine whether accuracy of hedonic prediction for a target product can be improved by drawing attention to various daily activities. We used a similar design to our study 2 with the addition of a 1-day defocusing condition. Before making predictions about their future enjoyment of the target product on day 7, participants assigned to this condition first completed a “Diary Study” where they were asked to estimate the number of hours they would spend on 10 activities during a typical week of a year (e.g., going to class, socializing with friends, studying, eating meals). We replicated the study 2 findings that participants in the 1-day condition control predicted their enjoyment of the target item to be much lower on day 7 than what the 7-day participants actually experienced. However, participants who were first asked to reflect on daily activities they would typically be engaged in made predictions that are roughly on par with the actual experienced enjoyment of the item on day 7.

In summary, we find that consumers’ enjoyment of durable hedonic products often declines over time. Predictions sometimes fail to accurately represent these trends. Specifically, consumers fail to predict adaptation for products that they have not yet experienced. Once they gain experience with the product, consumers tend to overpredict the degree of adaptation by focusing disproportional attention on their use of the target item.

REFERENCES
How Cue Congruity Affects Consumer Perceptions
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EXTENDED ABSTRACT

Consumers are exposed to a barrage of information cues about and from retailers. These cues can be categorized as being either high-scope or low-scope. A high-scope cue is one that is enduring such as a retail reputation. Whereas a low-scope cue is more easily changed such as a retailer offering or not offering a price matching guarantee (PMG) (Purohit and Srivastava 2001). The focus of this research is how consumers use the low-scope cue in forming evaluations as a function of the congruity with and valence of the high-scope cue.

Previous research offers conflicting evidence as to the use of high and low-scope cues in evaluations. Purohit and Srivastava (2001) demonstrate that high-scope cues are used in evaluations regardless of the valence of other cues, but low-scope cues are used only when the valence of the high-scope cue is positive. In contrast, research into the impact of PMGs (a low-scope cue) demonstrates that that a low-scope cue is only used when a retailer is not price competitive (a negative high-scope cue) (Biswas et al. 2002; Lurie and Srivastava 2005). Thus, one research stream indicates that the low-scope cue will be used when the high-scope cue is positive, and the other indicates that it will only be used when the high-scope cue is negative.

This research seeks to resolve the apparent discrepancy by understanding how the level of congruity between the high and low-scope cues impacts evaluations. Consider, for example, the association between the type of retailer reputation and a PMG. A PMG is more congruent with a retailer with a reputation based on price; and less with a retailer with a reputation based on service. Previous research has shown that the level of congruity between a stimulus (e.g., the low scope cue) and an evoked schema (e.g., schema based on the high-scope cue) influences both processing and evaluation of the stimulus (Campbell and Goodstein 2001, Mandler 1982, Meyers-Levy and Tybout 1989). Thus, we expect that the level of congruity between the cues will impact when the PMG is considered diagnostic and hence used in evaluations. Cue diagnosticity and level of congruency serve as underlying frameworks for this research.

Considering the impact of both congruence and the valence of the high-scope cue, we expect that when the low-scope cue (PMG) is congruent with the high scope cue (price reputation), the low scope cue will not impact evaluations of the retailer if the high-scope cue is positive, but will if the high-scope cue is negative. The reasoning for this follows from the fact that if the two cues are congruent they both evoke a schema related to price resulting in consumers viewing the PMG as relevant additional information to that evoked schema.

H1: When the high and low-scope cues are congruent (PMG provided and retailer’s reputation based on price competitiveness) there will be an interaction such that:

- The low-scope PMG cue enhances perceptions about the retailer when the high-scope reputation cue is negative.
- The low-scope PMG cue has no impact on perceptions about the retailer when the high-scope reputation cue is positive.

If the two cues are moderately incongruent they evoke different schemas related to the retailer. Cues which are moderately incongruent can both still indicate positive information. For example a retailer that provides excellent service can also offer competitive prices. If the high-scope cue is positive (excellent service reputation), consumers will consider other information about the retailer even if it is not related to the high-scope cue. Thus, the low-scope moderately incongruent cue is expected to impact evaluations when the high-scope cue is positive. But if the high-scope cue is negative (poor service reputation), impressions of the retailer will be more heavily influenced by the negative information (Ahluwalia 2002; Skowronski and Carlston 1987). A moderately incongruent cue is not directly associated with and hence relevant to the schema evoked by the high-scope cue and is unlikely to offset the negative impact of the high-scope cue. Thus, we expect that:

H1b: When the high and low-scope cues are moderately incongruent (PMG offered and retailer’s reputation is not based on price) there will be an interaction such that:

- The low-scope PMG cue enhances perceptions about the retailer when the high-scope reputation cue is positive.
- The low-scope PMG cue has no impact on perceptions about the retailer when the high-scope reputation cue is negative.

These hypotheses are tested in three experiments. Experiment 1 uses a retailer with a reputation based on price, and experiment 2 uses retailer with a reputation based on service. Hence, the PMG is congruent with reputation in experiment 1 and is moderately incongruent with reputation in experiment 2. Finally, experiment 3 provides evidence to support the congruency and process arguments used in the development of hypotheses 1 and 2.

Experiment 1 utilized a 2 x 2 between subjects design which manipulated reputation of the retailer (positive/negative) and the presence of a PMG (present/absent). The retailer’s reputation was based on price. Experiment 2 utilized the same design but the retailer’s reputation was based on service. Finally experiment 3 utilized a 2 x 2 between subjects design in which the valence of the retailer’s reputation (positive/negative) and the type of retailer’s
reputation (service/price) were manipulated. Results support the hypotheses.

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