Affective forecasting for future consumption improves across the life span

Lisa Zaval, Ye Li and Eric J. Johnson

Author note: Lisa Zaval is a post-doctoral researcher at the Center for Decision Sciences in the Graduate School of Business at Columbia University. Ye Li is an Assistant Professor of Management & Marketing in the School of Business Administration at the University of California, Riverside. Eric J. Johnson is Norman Eig Professor of Business and co-director of the Center for Decision Sciences in the Graduate School of Business at Columbia University. Correspondence concerning this article should be addressed to the first author at Columbia University, 3022 Broadway Avenue, New York, NY, 10027 (lz2261@columbia.edu). This research has been supported by NIA Grant R01AG044941. We thank Elke Weber for helpful comments; and Jon Westfall, Min Bang, Jie Gao, Zeynep Enkavi, and Brian Huh for technical support in running the studies.
CONTRIBUTION STATEMENT

Although age differences in affective forecasting have important implications for consumer behavior and for the welfare of older adults, only a handful of papers on this topic exist and none have examined underlying mechanisms. Given large cognitive declines with age (e.g. Salthouse et al. 2008), it is critical to investigate whether other skills, such as affective forecasting, may also show declines or, instead, might help mitigate the impact of cognitive decline on older consumers’ decision-making. More research on consumer decision making and aging is particularly important for developing an improved understanding of ways to maintain consumer satisfaction and high decision quality across the life span (Yoon and Schwartz 2010; Carpenter and Yoon 2012). Increasing focus on how different consumers make these types of pervasive affective judgments may be crucial to understanding impulsive buying and purchase regret (Patrick and MacInnis 2007).

Taken together, our findings contribute to the literature on age differences in decision-making by showing that affective forecasting is a skill that actually improves across the life span. Of the potential underlying mechanisms measured or manipulated in the present study (including cognitive ability, domain-specific experience, and current affective state) we find that perceptions of future self-continuity (the degree to which one perceives connection between one’s current and future identity) showed the most promise in explaining age-related differences in affective forecasts. Further, our results also offer a new potential explanation of increasing patience in intertemporal choices over the life span, as we find that increased patience in older adults is associated with age-related improvements in future anhedonia.
ABSTRACT

Affective forecasting plays a major role in consumer choice but suffers from many systematic errors. However, little is known about how forecasting accuracy changes over the adult life span. We present four studies that investigate age differences in consumers’ ability to forecast how they will feel about upcoming events (e.g., receiving a gift basket). We show one way that affective forecasting improves across the life span: Older adults are less likely than younger adults to wrongly predict that their affective response to an event will be less intense if the event occurs later in time—a reduction of future anhedonia. We find this age-related improvement for predictions about money as well as consumer goods, but not for predictions about losses. An examination of underlying mechanisms suggests that the age difference in future anhedonia is driven by age differences in the perceived psychological connectedness between one’s current and future self. Further, we show that less susceptibility to future anhedonia may contribute to older adults’ more patient temporal discounting. These results have implications for age-related changes in an array of consumer judgments including product evaluation, consumer satisfaction, and purchase regret.

Keywords: affective forecasting, aging, time preference, future self-continuity
INTRODUCTION

Many consumer decisions involve future rather than immediate consumption. In these cases, peoples’ decisions must be based on predictions about how they will feel at a later time. When planning to purchase new clothes, for example, shoppers must make predictions about how they will enjoy wearing the clothes later that season, and when booking a vacation, a consumer is making a forecast of their future enjoyment. Consumer welfare therefore depends on the ability to accurately forecast future feelings about potential purchases.

Prior research confirms that people regularly engage in affective forecasting (Gilbert et al. 1998)—i.e., they anticipate or predict how they will feel in the future. Unfortunately, people are often poor predictors of their future affective states (Gilbert et al. 1998; Loewenstein and Schkade 1999), and experienced affect often deviates from predicted affect (Gilbert and Ebert 2002; Kermer et al. 2006).

One particular forecasting error that has attracted research attention is future anhedonia, in which consumers assume that their affective responses to a positive event will be less when the event occurs further in the future than when it occurs today (Kassam, Gilbert, Boston, and Wilson 2008). Future anhedonia contributes to impatient intertemporal choices, a phenomenon associated with consumer problems such as obesity (Chabris et al. 2008; Reimers et al. 2009), credit card debt (Meier and Sprenger 2010), and substance abuse (Kollins 2003; Bickel and Marsch 2001). The detrimental consequences of consumer impatience highlight the need for a better understanding of factors that impact susceptibility to affective forecasting errors, since some consumers may be at greater risk for poor affective forecasting than others.

We examine if consumers’ susceptibility to affective forecasting errors may differ by age. Understanding potential age differences in affective forecasting ability is essential, as inaccurate
forecasts have important practical relevance for older consumers: Aging is associated with a
broad range of critical decisions about the future in areas such as retirement planning (Hershey et
al. 2007), long-term investments (Frolik 2009), and health care choices (Anderson 2007).
However, despite considerable research suggesting that affective forecasting errors have
important impacts on consumer judgments (e.g., Patrick and MacInnis 2007), less is known
about how age influences the accuracy of these forecasts. Moreover, the research that has
examined age-related differences has focused on identifying inaccuracies, but work is needed to
investigate the underlying processes by which age differences emerge.

The effect of age on affective forecasting ability may depend on key psychological factors
that change across the life span, including those that decline with age such as cognitive ability
(Salthouse, Pink, and Tucker-Drob 2008), and those that improve with age such as accumulated
life experiences (Tentori et al. 2001; Yoon, Cole, and Lee 2009; Li et al. 2013; Li et al. 2015)
and adaptive emotional processing (Scheibe and Carstensen 2010). Further, because affective
forecasting decisions are embedded in a temporal context, age-related changes in mental
representations of time, such as the general capability to know that the future is going to feel the
same as today, suggest that the accuracy of affective projections may improve across the life
span (Rutt and Löckenhoff 2016).

The present research investigates the hypothesis that affective forecasting accuracy improves
with age. In particular, we set out to test whether age reduces susceptibility to future anhedonia,
such that older adults are less likely than younger adults to wrongly predict that their affective
response to an event will be less intense if the event occurs later in time. Recent research
suggests that the experience that comes with age can compensate for cognitive declines (Li et al.,
2015), and we expect that the aging process may also lead to learning that affective responses to
future outcomes do not diminish in scope. Of course, that experience has many components, and we examine several alternative mechanisms that might mediate this hypothesized age-related improvement in future anhedonia. To preview our results, among the potential underlying mechanisms included in the present study, we find that future self-continuity (the degree to which one perceives connection between one’s current and future identity) alone explained age-related differences in affective forecasts.

To put our predictions into context, we first review existing lines of research that have relevance to age differences in future anhedonia, integrating across diverse literatures on mental representations of time, affective processing and accumulated domain-specific experience. We discuss the theoretical rationale for our predictions and then consider the possible implications for age differences in affective forecasting ability and consumer judgments and decisions.

**Theoretical Background**

**Affective Forecasting and Aging**

Prior work on affective forecasting errors reveals that mispredictions can take a number of forms, and that people often make inaccurate forecasts concerning both the intensity and the duration of their affective responses (Frederick, Loewenstein and O'Donoghue 2002; Wilson and Gilbert 2003; Busse et al. 2015). The inability to accurately predict future affective states can lead to sub-optimal purchasing decisions (Kahneman and Snell 1992) and may contribute to consumer judgments such as product dissatisfaction (Sevdalis et al. 1983), negative product evaluations (Patrick and MacInnis 2007), purchase regret (Dittmar 2001) and product returns (Conlin, O’Donoghue and Vogelsang 2007).

Although age differences in affective forecasting ability have important implications for consumer behavior and the welfare of older adults, only a handful of papers on this topic exist.
Two studies found age improvements: When playing an incentivized game involving gains and losses, younger, but not older adults underestimated increases in arousal during anticipation of small monetary gains and losses, and overestimated increases in arousal in response to gain outcomes (Nielsen, Knutson, and Carstensen 2008). Forecasting accuracy also improved with age in a study in which participants predicted how they would feel if their preferred presidential candidate won or lost the 2008 election, particularly among supporters of the winning candidate (Scheibe et al. 2011). In contrast, no age differences in forecasting accuracy were found in a study in which older and younger adults predicted how satisfied they would feel after choosing among everyday products (Kim et al. 2008).

In summary, despite some preliminary evidence that older adults more accurately predict future affective states, research is needed to clarify the scope of this age difference and provide an explanation for what psychological processes may contribute to age-related changes. We focus on one forecasting error, future anhedonia, the prediction that affective states will be less intense for events that happen in the future than the present (Kassam et al. 2008). According to this conceptualization, it may be more difficult to mentally represent the emotional response that follows receipt of a temporally distant reward compared with a reward received in the present (Kassam et al. 2008; Lempert & Pizzagali, 2010). Although consumers should discount delays in receiving rewards to some degree, discounting it due to future anhedonia is an error: Your happiness upon receiving a gift basket should be the same at the moment of receipt whether it happens today or 1 month in the future. In the next sections, we outline several potential mechanisms that may produce changes in future anhedonia over the life span.

Aging, Future Anhedonia, and Mental Representations of Time
A body of work indicates that the temporal distance of an event influences people’s mental representation of that event. Future anhedonia inherently involves the evaluation of future events and outcomes, and thus may be related to people’s mental representations of the future. Research demonstrates that mental representations of time and of the future vary across the adult life span (for a review, see Löckenhoff 2011). One aspect of future time perspective that has recently been shown to increase across the life span is future self-continuity (Rutt and Löckenhoff 2016), defined as the degree to which a person believes that the current self’s psychological characteristics will persist in the future self (Hershfield et al. 2009; Bartels and Rips 2010; Bartels and Urminsky 2011; Bartels and Rips; Hershfield, Cohen, and Thompson 2012). Enhanced feelings of future self-continuity among older adults may play a key role in preserving emotional well-being and a sense of identity as one grows older (Baltes, Lindenberger and Staudinger 2006). These age-related shifts have important implications for intertemporal decision making and affective forecasting, since one determinant of people’s predictions about future events is the person they expect to be when those events occur (Ersner-Hershfield et al. 2009). Feeling disconnected from the future self may lead to inaccurate valuations of future outcomes, including the mistaken belief that one will experience less intense affect when an event occurs in the future than when the same event occurs in the present.

Indeed, research suggests that when people believe that their identity remains stable over time, they will tend to exhibit greater consideration of their future needs. For example, high levels of future self-continuity have been shown to facilitate savings and investment behavior (Ersner-Hershfield et al. 2009) and reduce long-term discount rates (Bartels and Urminsky 2011). An age-related increase in future self-continuity is therefore consistent with evidence showing that as people age, they discount the value of delayed rewards less steeply and thus behave more
patiently relative to young adults (Li et al. 2013; Löckenhoff et al. 2011; Whelan and McHugh 2009; Reips 2002; Green, Fry, and Myerson 1994). It stands to reason that older adults’ more patient intertemporal choices may be related to reductions in future anhedonia, such that older adults make more realistic affective predictions regarding present and future events.

In summary, prior research indicates that future self-continuity is an important determinant of intertemporal decisions, and is positively associated with age and patience. We posit that age-related improvements in future anhedonia occur, at least in part, because older adults feel a stronger connection with their future selves. If older adults are more likely to believe that the current self’s psychological characteristics will persist in the future self, then older adults should project that their affective reactions to outcomes will likely feel the same, regardless of when that outcome is realized.

**Age and Affective Processing**

An alternative account suggests that age differences in affective forecasting accuracy are informed by changes in emotional processing abilities. A growing body of research indicates that affective processing abilities show differential age trajectories (Carstensen 2006; Figner, Mackinlay, Wilkening, and Weber 2009) with implicit forms of knowledge, such as affect, becoming more important inputs into decisions as deliberative processes decline with age (Mather, 2006; Peters, Finucane, MacGregor, and Slovic 2000; Peters et al. 2007).

To explain this difference, socioemotional selectivity theory (SST; Carstensen, Isaacowitz and Charles 1999) contends that priorities shift as time horizons become increasingly limited, with positive affect-focused goals becoming increasingly salient (e.g., Williams and Drolet 2005). One important way in which people incorporate emotions into their judgments is when constructing affective forecasts, and it stands to reason that age differences in emotional
processing would result in systematic differences in young versus older adults’ forecasting ability. Indeed, work consistent with SST indicates that older adults display improved emotion regulation and problem solving strategies (Kessler and Staudinger 2009; Scheibe and Blanchard-Fields 2009), which may confer advantages in constructing more accurate affective forecasts (Kafetsios 2004).

Age, Knowledge and Domain Experience

In addition to age-related improvements in domain-general capabilities (affective processing and mental representations of the future), age-related changes in situation-specific learning may also play a role in reducing forecasting errors. To make accurate predictions about future emotional states, people may rely on domain-specific semantic knowledge, including beliefs about the levels and kinds of emotions generally experienced in particular situations (Robinson and Clore 2002). Specifically, when making forecasts, people may identify when they have experienced a comparable event in their past and accurately recall their emotional response to that event (Wilson and Gilbert 2003), an ability that may improve with the accumulation of experience and situation-specific knowledge. Some research has demonstrated that people rely on such theories to remember their feelings in the past (e.g., McFarland & Ross 1987). For example, evidence suggests that people who have prior experience with or knowledge of a particular situation make more accurate affective forecasts concerning adaptation. For example, Schkade and Kahneman (1998) showed that people who know someone who is paraplegic make more accurate affective forecasts concerning the frequency with which paraplegics exhibit happiness-related behaviors. It is possible that accumulated emotional experiences with prior events and outcomes (a form of domain-specific knowledge) should help older adults accurately construct personal forecasts and thereby circumvent future anhedonia errors. This logic is similar
to that used in recent research on older adults that demonstrates that their relevant knowledge and experiences compensates for the impact of age-related changes in cognitive abilities (Yoon, Cole, and Lee 2009; Li, Baldassi, Johnson, and Weber 2013; Li et al. 2015; Zaval et al. 2015).

**The Present Research**

While research on age differences in decision making suggest that older adults may exhibit greater accuracy in affective forecasting, there have been limited demonstrations of this phenomenon. We examine age-related reductions for errors of future anhedonia, the recognition that an outcome will produce similar affective responses regardless of whether it occurs now or in the future. We present four studies that investigate this hypothesis. In studies 1 and 2, we test the relationship between age and future anhedonia across a range of domains. Study 2 also rules out a cognitive explanation of the age effect and tests the link between age-related differences in future anhedonia and age-related increases in patience. In study 3, we explore the implications of this age effect on post-purchase consumer judgments, and examine several theoretically-implicated mechanisms that may account for age differences in affective forecasting, identifying the unique role of future self-continuity. Study 4 extends these results by experimentally manipulating future self-continuity to infer causality.

**STUDY 1: IMPACT OF AGE ON FUTURE ANHEDONIA FOR UTILITARIAN AND HEDONIC GOODS**

We designed study 1 to explore the relationship between age and the affective forecasting error of future anhedonia (FA). Specifically, we predicted that FA would decrease across the life span, such that older adults would be less likely to believe that they would experience less intense affect if an event happened in the future than if the same event happens in the present.
The study scenarios involved receiving either a financial reward or one of two consumer goods. To manipulate affect-rich versus affect-poor consumption, participants were asked to make decisions about both hedonic or utilitarian goods. To control for monetary value, both products were presented as $35 Amazon.com gift certificates redeemable for either for electronics (e.g., TVs, headphones) or for household products (e.g., cleaning products). We hypothesized that age-related improvements in affective forecasting ability would lead to older adults showing reduced FA for both categories of products.

Methods

We used a commercial survey firm to recruit a diverse sample of 645 U.S. participants ranging in age from 18-89 ($M = 45.7, SD = 19.4$) to complete a web-based survey. Participants were recruited in approximately even distribution across three age groups (18-35, 36-60, and 60+). See Supplementary Table S1 for demographic details. In a within-subjects design based on the methodology used by Kassam et al. (2008), participants read scenarios and estimated their present reaction to a present event, and their future reaction to a future event (at the time of its occurrence). Specifically, participants first predicted their present reaction to receiving $35, “If you were given $35 dollars right now, how happy would you be?” (1 = not at all happy; 9 = extremely happy). They then predicted their future reaction to the same event in 3 months, “If you were given $35 dollars three months from now, how happy would you be at that time?” Participants reported predicted happiness levels on a 9-point scale anchored from not at all happy to extremely happy.

Participants also predicted their reactions to scenarios about receiving $35 Amazon® gift certificates restricted to either electronics (hedonic) or home care (utilitarian) categories (categories selected based on Crowley, Spangenberg, and Hughes 1992). Participants read brief
descriptions about the gift card promotion and products. They were then asked to “imagine that as a promotion today, Amazon® is going to give away a few $35 [Electronics/Home Care] gift cards…How happy would you be if you won this home care gift card today?” and “imagine that as an August promotion, Amazon® is going to give away a few $35 [Electronics/Home Care] gift cards in 3 months…How happy do you predict you would you be if you won this gift card 3 months from now?” The two category scenarios were presented in counter-balanced order and separated by a number of questions from an unrelated survey (see Supplementary Materials for scenario text). Participants also provided demographic information, including gender, income and education.

Results

To explore age differences in future anhedonia, we first ran an omnibus mixed-effects regression on the affect ratings to assess the effects of time (within: now vs. 3 months), domain (within: financial vs. hedonic vs. utilitarian), age (between: continuous variable), and their interactions, controlling for participant-level variance. Consistent with the findings of Kassam and colleagues (2008), participants demonstrated future anhedonia: We observed a main effect of time, β = -0.31, z = -5.16, p < 0.001, such that participants predicted they would be less happy about events occurring in 3 months. More importantly, this main effect of time was qualified by an age × time interaction, in the predicted direction (β = .006, z = 2.11, p < .05), meaning that future anhedonia errors were smaller for older adults.

We observed no main effects of domain (β = -0.04, z = -0.77; β = 0.02, z = .28, ps = ns), no domain × time interactions (β = .12, z = 1.43; β = .07, z = 0.81, ps = ns), and no three-way interactions (β = -.003, z = -0.77; β = -.001, z = -0.40, ps = ns), suggesting that future anhedonia errors and age effects were similar across these three domains. Finally, we found a main effect of
age, $\beta = -0.01$, $z = -3.73$, $p < 0.001$, such that older adults tended to feel less strongly about the events in the present as well. This main effect of age was unpredicted but also not theoretically interesting.

For each forecasting scenario and each participant, we also calculated a future anhedonia index (FAI) for descriptive purposes, defined as the participant’s prediction of their present reaction to the present event minus their future reaction to the future event. We ran separate regressions FAI on age for each domain, again finding that older adults made smaller errors compared to younger adults for the financial gain ($\beta = -0.15$, $t(644) = -3.98$, $p < .001$), utilitarian good ($\beta = -0.11$, $t(644) = -2.75$, $p < .01$), and hedonic good ($\beta = 0.08$, $t(644) = -2.02$, $p < 0.05$).

As can be seen in Figure 1, FAI for the hedonic good decreases with age, and this is due to the convergence of the predicted feelings for present and future events, as shown by the boxes in the figure. The reduction of FA with age was also found using logistic regressions on whether or not a participant exhibited any degree of future anhedonia (i.e., FAI > 0, for financial gain, $z(644) = -3.54$, $p < 0.001$, utilitarian, $z(644) = -3.51$, $p < 0.001$, and hedonic goods, $z(644) = -3.54$, $p < 0.001$. Results remained robust after controlling for gender, education, and income.
Figure. 1. Mean Future Anhedonia Index scores for receiving a hedonic good (left y-axis; study 1) and mean affect ratings for both present and future scenarios (right y-axis) as a function of age group. Error bars denote ±1 SEM. Note that age was entered as a continuous variable for all regressions reported, but for ease of visualization, means for FAI are displayed categorically.

Discussion

These results provide initial evidence that older adults are less likely to wrongly believe that they will experience less intense affect when an event happens in the future than when the same event happens in the present. Future anhedonia appears to hold for consumer judgments regardless of whether people considered money or gift cards that were more utilitarian or more hedonic in nature, but older adults seem to make better affective forecasts in all domains.

In the next study, we provide further evidence of this relationship between age and future anhedonia and explore whether age differences in affective forecasting ability may help explain empirical evidence finding that older adults are more patient than younger adults.

STUDY 2: AGE, FUTURE ANHEDONIA AND TIME PREFERENCE
The objectives of study 2 were threefold. First, we explored the robustness of the relationship between age and FA by investigating FA age differences in domains such as financial gains, financial losses, and free-time gains, as well as measuring FA using a second dependent variable—willingness to pay.

Second, we examined the potential role of changing cognitive abilities over the life span. Cognitive aging is a robust phenomenon whereby people’s speed and capacity for generating, transforming, and manipulating information (i.e., fluid intelligence) decreases while their experience, knowledge, and expertise (i.e., crystallized intelligence) increase (Salthouse et al. 2008). It is possible that age-related changes in one or both types of intelligence contributes or detracts from the age-related changes in FA.

Third, we explored the potential relationship between age-related differences in affective forecasting accuracy to age-related changes in patience on intertemporal choices. If younger adults are more likely to believe that their future feelings regarding an event will be less intense than their present feelings about that same event, then this belief may influence their tendency to maximize benefits by enjoying them in the present.

Methods

In study 2, 619 U.S. participants ranging in age from 18 to 86 ($M = 45.6$, $SD = 16.3$) were recruited from a private university’s online panel ($n = 469$) and a survey sampling company ($n = 150$) to ensure a broad sample with a wide dispersion of cognitive abilities and backgrounds. Participants completed four waves of a web-based surveys consisting of cognitive ability, decision-making, and demographic measures across the life span, including our target variables and the DEEP Time task. (These data were collected as part of a larger study on aging and decision making; see Li et al. 2015 for details).
To measure future anhedonia, participants, in a within-subjects design, predicted their present reaction to receiving $100, “If you were given $100 dollars right now, how happy would you be?” (1= not at all happy; 9 = extremely happy). They then predicted their future reaction to a future financial outcome at the time of its occurrence, “If you were given 100 dollars three months from now, how happy would you be at that time?” We also investigated FA for temporal gains by asking participants how happy they would be today [in 3 months], upon discovering that they had an unexpected hour of free time. Finally, we assessed future anhedonia for financial losses by asking, “If you lost $100 dollars right now [3 months from now], how sad would you be [at that time]?” (1= not at all sad; 9 = extremely sad).

All participants who completed this first part of the study were invited to complete the next part 3 months later, and 478 completed it (22.8% attrition). This delay period allowed for measurement of the test-retest reliability for decision measures run as part of a larger study on aging and decision making, which will not be included in the present results. In the second part, we examined whether a standard economic measure of value—willingness to pay (WTP)—revealed age differences in future anhedonia when the focal event involved receiving a consumer good. Participants first responded to: “Imagine that as a promotion today [three months from now], Amazon® gave you a box set of DVDs of your favorite TV show, worth $100.00…How happy would you feel today if you were given this gift today [when you received the gift at that time]?” They then estimated their WTP: “Now imagine that [in three months,] Amazon® is considering selling the box set at a discounted price instead…[Three months from now, ] what is the maximum amount of dollars you would be willing to pay for the boxset?”

To measure cognitive abilities, we included several measures of fluid intelligence, including Raven’s Progressive Matrices, Letter Sets, the Cognitive Reflection Test, and Numeracy, and of
general crystallized intelligence, including the *WAIS-III Information* task and tests of synonym and antonym vocabulary (see Li et al. 2015 for details).

Finally, to test whether age differences in future anhedonia are related to age differences in patience, participants completed the DEEP Time task (Toubia et al. 2013). DEEP Time is an adaptive measure of time preference that presents 20 binary choices between smaller, sooner cash rewards and larger, later rewards. Participants’ time preferences were estimated from these choices using Bayesian Markov chain Monte Carlo methods. Importantly, the DEEP Time task estimates the quasi-hyperbolic discounting function (Laibson 1997), which includes both standard, exponential discounting of future consequences (\(\delta\)), and “present bias” (\(\beta\)), or how much a decision maker discounts all future rewards regardless of delay length. For a full discussion of this adaptive measure and its Bayesian estimation procedure, including validity checks of the estimation of time preference parameters, see Toubia et al. (2013).

**Results**

We first ran an omnibus mixed-effects regression on the affect ratings to assess the effects of time (within: now vs. 3 months), domain (within: financial gain vs. free time vs. financial loss), age (between: continuous variable), and their interactions, controlling for participant-level variance. As expected, we observed a main effect of time, \(\beta = -0.31, z = -3.97, p < 0.001\), such that participants predicted that they would experience less emotion in response to events occurring in 3 months, indicative of future anhedonia. The main effect of time was qualified by a marginal age \(\times\) time interaction, \(\beta = 0.08, z = 1.74, p = .08\), in the predicted direction, such that future anhedonia errors were reduced for older adults.

We also observed main effects of domain, such that participants predicted more intense affect ratings for the $100 financial gain compared with the hour of free time, \(\beta = -0.71, z = -9.16, \)
Participants also reported feeling sad about losing $100 than they felt happy about gaining $100, \( \beta = -1.13, z = -14.6, p < .001 \). This was qualified by a time \times domain interaction for financial loss (vs. gain), \( \beta = 0.31, z = 2.81, p < .01 \), such that FA errors were observed for financial gains (financial: \( M_s = 8.57 \) vs. 8.26, \( t(618) = 9.03 \)) but not for losses (\( M_s = 7.43 \) vs. 7.44, \( t(618) = -0.03 \)). The time \times domain interaction for free time gain (vs. financial gain) was not significant, \( \beta = -0.02, z = -0.24, p = ns \) (ratings for free time: \( M_s = 7.86 \) vs. 7.52, \( t(618) = 7.23 \)). We observe no main effect of age, \( \beta = -0.001, z = 0.52, p = ns \), no age \times domain interactions (\( \beta = -0.005, z = 1.16; \beta = -0.005, z = -1.10, ps = ns \)), and no three-way interactions (\( \beta = -0.003, t = -0.48; \beta = -0.004, t = -0.70, ps = ns \)).

For ease of exposition, we also calculated a future anhedonia index (FAI = present minus future) for each participant and scenario as we did for study 1. Regressions of FAI on age showed that older adults made less FA errors compared to younger adults for the financial gain (see Figure 2), (\( \beta = -0.16, t(616) = -4.00, p < .001 \)), and hour of free time (\( \beta = -0.07, t(616) = -1.79, p = .07 \)). However, we did not observe a significant effect of age on FAI for the $100 loss scenario, \( \beta = -0.05, t(615) = -1.25, p = ns \). Figure 2 again shows the declining FAI and the convergence of the present and future ratings, paralleling study 1.

Age differences in future anhedonia also extended to receiving a consumer good and WTP for it. There was a marginally negative relationship between age and FAI regarding receipt of the gift and FAI for willingness to pay for the gift. A regression of FAI on age found that older adults were less susceptible to FA in terms of happiness of receiving the DVD box-set, \( \beta = -0.10, t(476) = -1.60, p = .11 \), and WTP for it, \( \beta = -0.08, t(476) = -1.64, p = .10 \).

*Fluid and Crystallized Intelligence*
Results of age differences in FAI remain the same after controlling for fluid intelligence in multiple regression analyses. Consistent with prior research, fluid intelligence was higher for the younger participants in this study ($r_{age} = -0.33, p < .001$). However, measures of fluid intelligence, such as Raven’s Progressive Matrices, were found to be negatively related to FA, (i.e., financial gain scenario: $r = -0.08, p < .05$; free time scenario: $r = -0.10, p < .01$), suggesting that lower fluid intelligence is associated with increased FA errors. Thus, despite age-related cognitive declines, which are associated with increased FA, older adults made less FA errors compared with their younger counterparts.

Age differences in FAI were also robust controlling for age differences in crystallized intelligence. Consistent with prior research, crystallized intelligence was found to be higher for older participants ($r = 0.33, p < .001$). We found that measures of crystallized intelligence (i.e., measures of vocabulary) were negatively related to FA for the financial gain scenario ($r = -0.12, p < .01$), but were not related to FA for the other scenarios (free time reward: $r = -0.04$, financial loss: $r = 0.001 \ p s = ns$). Using a bootstrapping procedure with 5,000 samples (Preacher and Hayes 2008), we observe partial mediation through crystallized intelligence of the effect of age on FA for the financial gain scenario CI95 [-0.002, -0.001], $p < .05$), suggested that domain-general knowledge and experience may play a role in attenuating FA errors relating to financial gains for older adults.
Time preference and future anhedonia

We next examined whether observed age differences in future anhedonia were related to age differences in time preferences. First, we found support for older adults have more patient time preferences: Older adults displayed less present bias (the overvaluation of immediate outcomes, where smaller $\beta$ indicates greater present bias; $r(608) = .10, p < .05$) and lower exponential discount rates (general impatience; where larger $\delta$ are more impatient; $r(608) = -.09, p < .05$).

More importantly, future anhedonia was associated with greater present bias. Participants with higher FAIs for the $100$ gain and for $1$ hour of free time displayed more present bias (money: $r(607) = -.23, p < .001$; time: $r(606) = -.13, p < .001$). Participants’ exponential discount
rates (δ) were also correlated with their FAI for the $100 gain, \( r(607) = 0.20, p < .001 \), and for the 1 hour of free time, \( r(606) = .09, p < .05 \), indicating that less patient participants tended to believe that they would be happier upon receiving $100 or an hour of free time in the present than in the future. This suggests that future anhedonia is not only associated with the overvaluation of immediate outcomes, as would be expected, but also predicts general discounting behavior. Neither present bias nor exponential discount rates were related to FAI for the $100 financial loss; \( \beta: r(607) = .064, p = ns; \delta: r(607) = -.05, p = ns \).

We also conducted mediation analysis with 5,000 bootstrapped samples for FAI as a mediator of the effect of age on time preference and found significant mediation: Exponential discount rate: age, direct: \( t(609) = -2.31, \) age, mediated: \( t(609) = -1.59, \) indirect effect; CI \(_{95}\) [-0.001, -0.001], \( p < .001 \). Present bias: age, direct: \( t(609) = 2.53, \) age, mediated: \( t(609) = 1.71, \) CI \(_{95}\) [0.001, 0.001], \( p < .001 \).

**Discussion**

Consistent with study 1 results, older adults again made more accurate affective forecasts in terms of less future anhedonia. These findings suggest that with age comes the awareness that events will likely feel the same, regardless of whether they occur in the immediate present or at some delay in the future. Although all participants mistakenly believed that a receipt of a monetary gain, an hour of free time, and a consumer good would bring them less happiness when it happened in the future than when it happened in the present, this bias was diminished for older adults.

Our findings also indicate that age differences in affective forecasting extend into the realm of temporal discounting, as we find that increased patience in older adults is related to age-related improvements in future anhedonia. Youthful short-sightedness has long been implicated
as a cause of poor judgment in risky decision-making. In line with this account, our results indicate that age-related improvements in FA may be linked to the extent to which one discounts future outcomes.

Thus far, our investigations have largely been limited to identifying age differences in future anhedonia. We next investigate the potential underlying processes driving this age-related improvement, as well as its impact on post-purchase consumer judgments. Some theorists have suggested that problems with intertemporal decision making occur because of conflicts between temporally distinct selves (Hershfield 2011). These previous findings suggest that age differences in time discounting are at least partially explained by an age-related tendency to perceive one’s present feelings as more connected to future emotions (Löckenhoff, O’Donoghue, and Dunning 2011). Conceivably, age-related increases in future-self continuity may underlie the relationship between age, discounting and future anhedonia bias that we observed in study 2.

**STUDY 3: EXPLORING UNDERLYING PROCESSES**

Studies 1 and 2 provided evidence that older adults show reduced future anhedonia. We next focus on two questions raised by these results: What underlying psychological factors may account for this age difference, and what are the implications of this age effect on post-purchase consumer judgments?

The results of study 2 also suggest that the effect of FA may depend upon category and valence, as we did not find FA for a $100 monetary loss. We therefore explore the generalizability of the age effect across outcome valence and consumer product category. In addition to examining future anhedonia for the loss of consumer goods, we examine whether the type of product (hedonic versus utilitarian) described in the scenario moderates age differences in FA. The product categories described in study 3 improve upon those used in study 1 in two
ways. First, we designed scenarios that eliminated gift cards and instead asked participants to imagine that they would receive a product by mail. Second, we changed the product domains in order to better distinguish between hedonic and utilitarian aspects.

As we have argued, there are many possible explanations for age differences in future anhedonia. Thus, study 3 also assesses the role of a range of theoretically-implicated mechanisms that may change with age, including future self-continuity, dispositional affect, and domain-specific consumer experience. One hypothesis suggests that perceived future self-continuity is associated with age differences in future anhedonia. In our view, feeling disconnected from the future self may generally lead to inaccurate valuations of future outcomes, including future anhedonia.

We also explore one potential consumer judgment related to the construct of future anhedonia: post-purchase regret. It is possible that when consumers do not project their current tastes onto their later selves, future anhedonia may induce people to consume benefits sooner, when their positive qualities are expected to be more intense, rather than later (Kassam et al. 2008). Indeed, if older (and potentially more experienced) consumers are less likely to commit forecasting errors, then they may be less likely to experience purchase regret, or actually negate a forecasting error by returning a product. To explore this hypothesis, study 3 also tests whether age differences in future anhedonia are related to diminished post-purchase regret among older consumers.

Methods

We recruited 752 U.S. participants ranging in age from 18 to 80 ($M = 36.7$, $SD = 12.02$) from Amazon’s Mechanical Turk in three similarly-sized age groups (18-30, 31-45, 46+).
To measure future anhedonia, participants read five scenarios involving (1) receiving a financial reward, (2) receiving a hedonic good, (3) receiving a utilitarian good, (4) losing a hedonic good, and (5) losing a utilitarian good. We used the same financial gain wording as study 1: “If you were given $35 dollars today [three months from now], how happy would you be?” [1 = not at all happy; 9 = extremely happy].

For the hedonic gain scenarios, participants were asked to “imagine that as a special winter [spring] promotion, Godiva® Chocolatier is mailing some people free gift baskets, filled with chocolate worth $35 dollars [in three months]…How happy would you be [at that time] if you received this gift basket today [three months from now]?” For the utilitarian gain scenarios, participants were instead asked to imagine a scenario in which their utility company was mailing customers a free package of light bulbs worth $35 dollars.

To measure future anhedonia for losses, participants were asked to imagine that they spent $35 on [a bag of clothing you like from your favorite store (hedonic loss)/food you need from your local supermarket (utilitarian loss)], but that the purchased item was then lost and cannot be recovered. Participants were asked how sad they would be if this loss occurred today versus three months from now on a 9-point scale [1= not at all sad; 9 = extremely sad].

Participants also completed measures of psychological constructs that may be related to future anhedonia. To assess the extent to which participants felt their identity is enduring over time, participants completed an index of future self-continuity, adapted from the Future Self-Continuity Scale (Hershfield et al. 2009; Hershfield and Thompson 2012). This scale asks participants to specify which pair of 7 overlapping Euler circles (that range from no overlap to almost complete overlap) best represent the extent to which their identity now overlaps with their identity five years in the future. In addition, to examine whether domain specific consumer
experiences underlie age differences in future anhedonia, we assessed participants’ level of experience with the focal event described in each scenario. For example, to assess experience with the hedonic product, participants were asked to approximate how many times over the course of their life they had received chocolates or sweets as a gift. Additionally, we examined positive and negative affect, using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen 1988), which distinguishes clearly between two emotional dimensions of subjective well-being.

Finally, to assess the relationship between future anhedonia, age, and post-purchase judgments, participants answered questions about purchase impulsivity and consumer regret. Participants were asked to report their level of agreement with the following statements on a 5-point scale: “I like to plan purchases rather than relying on impulse” and “I often regret making a purchase and feel buyer’s remorse” (adapted from Lee and Cotte 2009). Participants also provided self-reports of how many times over the past year they had returned a purchase or let a gift card expire.

**Results**

We first ran an omnibus mixed-effects regression on the affect ratings to assess the effects of time (between: now vs. 3 months), domain (between: financial gain vs. hedonic product vs. utilitarian product vs. hedonic loss vs. utilitarian loss), age (within: continuous variable), and their interactions, controlling for participant-level variance. Participants exhibited future anhedonia overall as evidenced by the main effect of time, $\beta = -0.62, z = -18.30, p < .0001$. The main effect of time was qualified by time $\times$ domain interactions for hedonic losses ($\beta = -0.20, z = -2.25, p < .05$) and for utilitarian losses ($\beta = -0.32, z = -3.83, p < .001$) but not for hedonic gains ($\beta = -0.069, z = -0.64, p = ns$) or for utilitarian gains ($\beta = 0.002, z = 0.02, p = ns$). That is,
participants exhibited more future anhedonia for losses of both hedonic and utilitarian consumer goods than for financial gains.

More importantly we again found an age × time interaction, $\beta = 0.006$, $z = 4.41$, $p < .0001$, such that older adults showed less future anhedonia, with no significant three-way interactions. As in the previous studies, for each forecasting scenario, we calculated for each participant a future anhedonia index (FAI). Regressions of FAI on age showed that older adults made less FA errors compared to younger adults for the financial gain, $\beta = -0.09$, $t(751) = -2.59$, $p < .01$, and for the hedonic (chocolate) gain, $\beta = -0.07$, $t(751) = -2.69$, $p < .05$. However, we did not observe age difference in FA for the utilitarian gain, $\beta = -0.02$, $t(751) = -0.65$, $p = ns$, or for product losses (hedonic: $\beta = -0.05$, $t(751) = -1.38$; utilitarian: $\beta = -0.04$, $t(751) = -0.98$, $ps = ns$).

**Role of Future Self-Continuity**

Since future anhedonia may be related to discontinuity with the future self, we examined whether individual differences in future anhedonia were related to differences in future self-continuity. Consistent with prior research (Rutt and Löckenhoff 2016), older adults felt more connected to their future self, $r = .29$, $p < .0001$. Importantly, participants who felt their current self would overlap considerably with their self five years into the future showed less FA across all scenarios (hedonic gain: $r = -.18$, $p < .001$; utilitarian gain: $r = -.14$, $p < .0001$; financial gain: $r = -.12$, $p < .001$; hedonic loss: $r = -.12$, $p < .01$; utilitarian loss: $r = -.10$, $p < .01$).

Next, we examined whether greater future self-continuity mediated the effect of age on future anhedonia error across gain domains using bias-corrected confidence intervals constructed from 5000 bootstrapped samples (Preacher and Hayes 2008). For receiving a hedonic good, age-related reduction in FA was mediated by future self-continuity (indirect effect; CI95 [-0.007, -
0.002], \( p < .01 \)). Similarly, future self-continuity also mediated the effect of age on future anhedonia for the monetary gain \((\text{CI}_{95} [-0.004,-0.001], p < .05)\).

**Consumer experience**

We hypothesized that previous experience with a particular consumer product may underlie age differences in future anhedonia for that product. As expected, older adults did report greater experience with both the hedonic (chocolate) and utilitarian (light bulb) goods described in our scenarios (hedonic; \( \beta = 0.10, p < .01 \); utilitarian; \( \beta = 0.19, p < .001 \)). However, consumer experience was not related to FAI. For example, participants who reported more experience receiving chocolates or sweets as a gift were not less likely to exhibit FA for this scenario \((r = 0.02, ns)\). Experience with the utilitarian gain was also unrelated to FAI for that scenario (utilitarian gain; \( r = 0.02, p = ns \)).

**Emotional well-being**

Consistent with socioemotional selectivity theory, older adults reported less negative mood than younger adults on the negative affect score of the PANAS \((\beta = -0.18, p < .001)\), and reported more positive mood than younger adults on the positive affect score \((\beta = 0.21, p < .001)\). However, negative mood was not significantly related to FAI for any of the loss or gain scenarios \((rs < .03, ns)\). Similarly, positive mood was not significantly related to FAI for any scenarios \((rs < .05, ns)\). That is, differences in emotional states did not explain age differences in FA.

**Post-purchase evaluations**

Finally, we examined whether consumer behaviors relating to accurate affective forecasting, including post-purchase regret and product return rates, are reduced among older consumers. We found that age was negatively associated with the frequency of feeling “buyer’s remorse,” \((\beta = -\)
0.12, t(751) = -3.31, p < .001), frequency of purchase returns (β = -0.09, t(751) = -2.50, p < .05), and frequency of letting gift cards expire (β = -0.12, t(751) = -3.19, p < .001).

Importantly, these individual differences in post-purchase judgments were also related to future anhedonia. For example, FAI for gain outcomes was positively associated with the frequency of feeling post-purchase regret; hedonic gain: β = 0.09, t(751) = 2.38, p < .05. Reduced errors in FA can alternatively be viewed as mediating the effect of age-related declines in post-purchase regret. For example, we find FAI for the hedonic good partially mediated the effect of age on post-purchase regret; (CI95 [-0.002, -0.0001], p < .05). Taken together, these finding support the argument that age-related improvements in future anhedonia may be part of an overall improvement in affective forecasting, and contribute to age-related declines in post-purchase regret.

**Discussion**

Results from study 3 replicate the finding that older adults are less likely than younger adults to mistakenly believe that they will experience less intense affect when events occur in the future than when they occur now. This age difference did not generalize across domains, however. Although we did observe age-related improvements for hedonic product gains, we did not observe age differences for utilitarian product gains. Further, age differences in FA were not observed for loss outcomes, consistent with study 2 results. This discrepancy may be due to the finding that people generally discount gains and losses differently (Appelt, Hardisty and Weber, 2012) and thus may not exhibit similar patterns for future anhedonia: Present bias for losses (the desire to get the loss over with now) has been shown to translate to lower discounting, while for present bias for gains (the desire to have the gain now) increases discounting behaviors.
In addition, we explore the practical implications of this age difference on consumer behavior. With respect to post-purchase judgments and future anhedonia, we found a significant correlation between FAI and post-purchase regret. Although this data is correlational, it is not difficult to imagine a causal relationship between future anhedonia and purchase regret: Future anhedonia may induce people to purchase a product sooner, when their positive qualities are more intense, which may lead to more impulsive purchases, and consequential feelings of buyer’s remorse among a younger consumer segment. Future work could benefit from manipulations of these constructs to explore how these complex phenomena are linked.

Among the factors measured in the present study, including previous experience and current affective state, only future self-continuity was significantly associated with age-related improvements in future anhedonia. These findings support the notion that the degree that one feels connected to one’s future self increases as people grow older, which leads to a greater awareness that events will likely feel the same, regardless of whether they occur in the present or at some delay. Although previous empirical studies have already verified the role of future self-continuity in temporal discounting, to our knowledge, this study is the first to find evidence supporting the relationship between naturally occurring variations in future self-continuity and affective forecasting. Prior research has shown that inducing psychological connectedness by asking participants to consider reasons why their identity would remain stable over time can reduce long-term discount rates (Bartels and Urminsky 2011). In study 4, we test whether experimentally-induced feelings of future self-continuity can similarly influence future anhedonia errors.

**STUDY 4**
The aim of study 4 was two-fold. First, we attempted to replicate the mediating effect of future self-continuity on age differences in future anhedonia when the outcome occurred further in the future (1 year). Based on the potential influence of perceived future-self continuity, we anticipated that age differences in future anhedonia would be apparent (or even more pronounced) for far future events, as younger adults would feel more dissociated from their future identity. Second, we aimed to test whether an experimentally manipulated sense of connectedness to future identity induces differences in people’s subsequent affective forecasts – specifically, changes in future anhedonia.

**Methods**

Six hundred young ($R = 18-30, M = 26.1, SD = 2.9$) and old ($R = 45-79, M = 55.0, SD = 7.4$) U.S. participants were recruited from Amazon’s Mechanical Turk, excluding middle-aged people to improve power. To manipulate future self-connectedness, participants were randomly assigned to one of two conditions and read a passage that described one’s identity as being highly stable over time (high connectedness) or highly unstable over time (low connectedness), adapted from Bartels and Urminsky (2011) (see Supplementary Materials for full text). Participants were then asked to write a one-sentence summary of the passage.

Next, participants completed two of the measures of future anhedonia used in study 3; the financial ($35) and hedonic good (chocolate) scenarios. For each scenario, participants indicated how happy they would be about the event today, 3 months from now, and 1 year from now. Finally, as a manipulation check, participants completed the Future Self-Continuity Scale, in which they specified the extent to which their identity now overlaps with their identity five years in the future.

**Results**
Overall, we replicated the effect of age on future anhedonia across scenarios and for both 3 month and 1 year delays. We found that younger participants displayed greater FAIs compared with older participants when the future outcome was in 1 year: $35: \beta = -0.14, t(626) = -3.51, p < .001$; chocolate: $\beta = -0.08, t(625) = -2.09, p < .05$. Younger participants also showed greater future anhedonia errors when the future outcome occurred in 3 months: $35: \beta = -0.11, t(627) = -2.68, p < .01$; chocolate: $t(625) = -2.74, p < .01$.

**Manipulating Future Self-Continuity**

As expected, we found that reading about the stability or instability of one’s identity over time influenced ratings of Future Self-Continuity. Participants shown the high-continuity manipulation reported higher feelings of future self-continuity ($M = 5.14, SD = 1.54$) compared with those in the low-connectedness condition ($M = 4.77, SD = 1.64$), $t(1, 625) = 2.89, p < .01$. The connectedness manipulation was equally effective for young ($M_s = 4.25$ vs. 4.62, $t(1, 296) = 2.20, p < .05$) and old participants ($M_s = 5.22$ vs. 5.64, $t(1, 296) = 2.20, p < .05$).

We next explore whether future self-continuity mediates the relationship between the connectedness inductions on future anhedonia by testing for the presence of an indirect effect (i.e., Zhao et al., 2010). Using bootstrapped mediation analysis with 5000 samples (Preacher and Hayes 2008), our results demonstrated that future self-continuity significantly mediated the effect of the connectedness induction on future anhedonia at 3 month and 1 year delays for both the $35 (3$ month: CI$_{95} [-0.09, -0.01], p < .01$; 1 year: CI$_{95} [-0.13, -0.02], p < .01$) and chocolate scenarios (3 month: CI$_{95} [-0.05, -0.003], p < .05$; 1 year: CI$_{95} [-0.09, -0.01], p < .05$).

**Discussion**

Results from study 4 replicate the finding that older adults are less likely to believe that they will experience more intense affect when events occur in the present than the future (three
months as well as one year). Furthermore, this age effect is mediated by the degree to which one perceives continuity between one’s current and future identity. The results of the future-self continuity manipulation suggest that this link is causal.

**GENERAL DISCUSSION**

Investigating age-related changes in consumer decision-making constitute a vital, but understudied area of consumer research (Carpenter and Yoon 2012). With the aging consumer segment growing in purchasing power and economic significance (e.g., Copeland 2012), researchers cannot afford to ignore how this group makes consumer judgments, including how they make affective forecasts. Although the literature on affective forecasting is broad and wide-ranging, it has largely neglected to examine whether older adults share deficits in properly predicting affective responses to future events. The present research attempts to address this gap by investigating age differences in one type of affective forecasting error, and exploring what underlying processes may contribute to age-related improvements.

Across four studies, we find that older adults are less likely to mistakenly predict that an event would bring them less happiness when it happened in the future than in the present. These findings make theoretical contribution on several fronts. First, given age-related cognitive losses, it is critical to investigate whether other abilities may help to compensate for and mitigate declines in decision making. Taken together, the present results add to the literature on age differences in decision-making by suggesting that future anhedonia is a skill that improves across the life span. These results are consistent with research demonstrating that emotion-related capabilities are relatively spared or even enhanced in advancing age (Labouvie-Vief, DeVoe, and Bulka 1989; Carstensen, Fung, and Charles 2003).
Our findings also add to a body of evidence demonstrating that people tend to devalue future outcomes and have a fundamental inability to project their feelings into the future. We find that increased patience in older adults is related to age-related improvements in affective forecasting for future events. Moreover, we demonstrate that age is related to diminished future anhedonia and that this may occur because older age fosters connection with the future self. Consistent with this result, our results indicate that age differences in future anhedonia are driven primarily by differences in judgments about future, rather than present, affect (see Supplementary Table 2). While both younger and older adults made similar judgments concerning their immediate affective responses to outcomes, older adults tended to predict that they would be happier upon receipt of future gains. This pattern of results is consistent with notion that future self-continuity contributes to age-related improvements in future anhedonia: Perceived connection to the future self should influence judgments about future, but not present affective responses. Additional research could expand on these results by exploring whether age differences in predictions of future events are moderated by the event’s temporal distance from the present, by exploring a range of future times.

Of the potential mechanisms measured in the present study, only future self-continuity was significantly associated with age-related improvements in future anhedonia. Although we did find that the other variables were significantly correlated with age, these constructs were not associated with future anhedonia. Of course, there are possible mechanisms other than the ones we have considered as well as potential alternative explanations for our findings. It is possible that considering a wider distribution of pertinent consumer experiences and emotional responses may be crucial to the age effects we obtained: Older adults’ advantage in affective forecasting may stem from their ability to identify the specific emotions that arise from complex affective
experiences. The challenge for future research will be to further delineate the determinants of age-related improvements in forecasting accuracy as a function of increased knowledge and experience, particularly concerning emotional responses.

In addition to theoretical implications, we believe that knowledge of forecasting differences between older and younger consumers has considerable practical value. We situated our research in the context of consumer judgments and showed that younger adults are more likely to mistakenly believe that they will experience less intense affect when the receipt of a consumer good occurs in the future than in the present. An increased focus on how different consumer segments make these types of nearly ubiquitous judgments may be crucial to developing effective marketing strategies (Patrick and MacInnis 2007). This is important, as studies of impulse buyers have shown that 80% refer to some negative consequences from their purchases (Rook 1987), and 55% explicitly reported regret at least once in a purchase diary (Dittmar 2001). Our results indicate that age-related differences in impulsive buying and purchase regret vary with age and are related to future anhedonia. Future research is needed to confirm whether real-world errors in consumer forecasting, including actual purchase return rates, are decreased among the aging segment. Moreover, investigations should ascertain the temporal stability and reliability of forecasting errors, and whether this stability is moderated by age.

Additional research on consumer decision making and aging will be required in order to develop an improved understanding of the different ways to maintain consumer satisfaction and high decision quality across the life span (Yoon and Schwartz 2010; Carpenter and Yoon 2012). Such research should take into account the rapidly growing evidence for age-related preservation in consumer judgments, how older adults make long-term decisions regarding their emotional
well-being (including financial and investment decisions), and how they might optimize those decisions—especially those involving tradeoffs between present and future outcomes.
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