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Differential Reliance on Feelings in the Present versus the Future (or Past):

Affect as a Decision-Making System of the Present

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We posit that compared to the cognitive system, the affective system of judgment and decision making is relatively more engaged in the present. Specifically, we hypothesize that even if their accessibility is held constant, affective feelings are weighted more heavily in consumer judgments and decisions set in the present than in equivalent judgments and decisions set in the future or in the past. Consistent with this proposition, results from six experiments show that (a) compared to a more distant future, a nearer future increases consumers' relative preferences for options that are superior in terms of integral affect over options that are cognitively superior; (b) compared to a more distant future, a nearer future also increases the influence of incidental moods on consumers' evaluation; (c) consumers find the reliance on feelings more "natural" in decisions set in a nearer future than in decisions set in a more distant future; and (d) compared to a more distant past, a more recent past also increases the influence of incidental moods on consumers' evaluations.

Consumer judgments and decisions can be made either in a more cognitive, reason-based manner—by assessing, weighing, and combining attribute information into an overall evaluative judgment—or in a more affective, feeling-based manner, by inspecting one's momentary feelings toward the options (Pham 1998; Schwarz and Clore 1996). An emerging body of evidence suggests that the two modes of judgment and decision making may tap into two separate systems: (a) a reason-based, analytical system and (b) a feeling-based, affective system (Epstein and Pacini 1999; Strack and Deutsch 2004). Whereas the judgment characteristics of the reason-based system are relatively well established and understood (Bettman, Luce, and Payne 1998), a growing body of research has focused on clarifying the distinctive judgment characteristics of the affective system (Hsee and Rottenstreich 2004; Pham 2007; Ratner and Herbst 2005; Slovic et al. 2002). One issue that has received relatively little attention are the conditions under which the affective system (as opposed to the reason-based system) is more likely to be engaged. The present research speaks to this issue.

This research suggests that everything else equal, the affective, feeling-based system is more likely to be engaged in judgments and decisions that are set in the present than in similar judgments and decisions that are set in the future or in the past. This broad proposition generalizes the established finding that compared to reason-based decisions, affect-based decisions tend to be more myopic (Ariely and Loewenstein 2006; Loewenstein 1996; Metcalfe and Mischel 1999). Specifically, previous explanations of this myopia have focused on the differential accessibility of affective/emotional feelings that are experienced in the present compared to those that are anticipated in the future. Because the immediate feelings that one experiences in relation to a present stimulus are more accessible and intense than those that one can only imagine in relation to a future state of the world, the reliance on feelings in judgments

and decisions steers preferences toward myopic options that are immediately rewarding compared to farsighted options that are superior in the long run (Loewenstein 1996; Loewenstein et al. 2001; Metcalfe and Mischel 1999; Mischel, Shoda, and Rodriguez 1989; Shiv and Fedorikhin 1999).

Although we agree that the differential accessibility of feelings is a major contributor to the myopic tendencies of affect-based decisions, we suggest that this phenomenon is only one facet of a more general property of the affective system. We propose that the affective system is, in fact, inherently a decision-making system of the present (Pham 2004, 2007). This proposition is derived from the rationale that as a remnant of our distant evolutionary past (Epstein 1994; Lieberman et al. 2002), the affective system was originally meant to guide behavioral choices that our ancestors faced in their immediate (i.e., present) environment (Cosmides and Tooby 2000, Pham 2007). We believe that because of its original emphasis on immediate behavioral choices, the affective system has retained a distinctive orientation toward the present. This orientation includes that current feelings are typically more accessible and intense than more temporally distant feelings but also implies other facets beyond this. Our general thesis is thus that the *entire* affective system of decision making is more likely to be engaged in judgments and decisions that are set in the present than in similar judgments and decisions that are set in a more distant time, whether in the future or in the past.

As an initial test of this general proposition, the present set of studies tests the more specific hypothesis that even when the intensity and accessibility of feelings are held constant, affective feelings are weighted more heavily in consumers' judgments and decisions that are set in the present than in equivalent judgments and decisions that are set in the future or in the past. In other words, even if feelings associated with present options and feelings associated with

future (or past) options were equally accessible and intense, consumers would still be more likely to rely on their feelings when evaluating options whose time frame is closer to the present than when evaluating options whose time frame is more distant. This hypothesis was tested in six consumer decision-making experiments spanning three different decision domains (apartment rentals, video games, and evaluations of past vacations) and involving two different types of manipulations of affect: manipulations of integral affective feelings toward the options and manipulations of participants' incidental mood states (Bodenhausen 1993).

THEORETICAL BACKGROUND

As a starting point, we review literature that provides empirical and theoretical bases for the present hypothesis. First, we review literature on time and decisions, including impulsivity, self-control, and delay of gratification. Next, we review literature on dual-system models.

Impulsivity, Self-Control, and Delay of Gratification

A substantial body of empirical evidence has shown that consumers are impatient and prefer options that offer immediate gratification over options that have superior outcomes in the future (Ainslie 1975; Mischel 1974; Mischel, Shoda, and Rodriguez 1989). Although consumers make well-reasoned choices when outcomes are distant, they become more likely to impulsively switch from their earlier, prudent choices as time gets closer to the receipt of the earlier reward. Various models have been proposed to capture this pattern of consumer myopia in choice situations across time, but less is known about the psychological mechanism driving this

behavior. A general assumption is that the value of outcomes is discounted as temporal distance from the outcomes increases (Ainslie 1975; Mischel 1974; Mischel et al. 1989; Trope and Liberman 2000, 2003).

One major stream of research in psychology that examines changes in value of outcome over time is Mischel's delay-of-gratification paradigm. Mischel and his colleagues investigated an important feature of self-control: postponing immediate gratification to attain delayed but overall more valuable outcomes (Mischel 1974; Mischel et al. 1989). Research in this area typically distinguishes the type of value of the outcomes between affect-based and cognitive-based values (Loewenstein 1996; Metcalfe and Mischel 1999; Mischel et al. 1989). Compared to cognitive-based values, affect-based values in the choice situation are assumed to be discounted much more steeply over time, making the influence of cognitive values more pronounced over time. For example, in deciding whether to consume a luscious chocolate dessert immediately, the tastiness of the dessert (its affect-based value) may prevail over its unhealthy consequences (its cognitive value). However, if the choice is delayed for a month, the unhealthy consequences of the desert will tend to outweigh its tastiness. Therefore, compared to reason-based decisions, affect-based decisions tend to be myopic and focused on the present.

A primary explanation for consumer impatience and myopia is that experienced affective responses to options whose outcomes are immediately accessible are typically more intense than anticipated affective responses to options whose outcomes are set in the future (Loewenstein 1996). For example, the thrill of an extra glass of whiskey while sitting at a bar with a friend is usually more intense than the anticipated regret of having drunk too much when waking up the day after. Similarly, among sedentary people, the pain of running several miles is usually more accessible than the anticipated pleasure of having done so afterward. As a result, a reliance on

feelings in judgments and decisions tends to skew preference toward myopic choices. Therefore a key explanation for people's myopic choices and their inability to exert self-control and delay gratification lies in the differential accessibility of current and delayed affective reactions (Shiv and Fedorikhin 1999).

Although we agree that the differential accessibility of feelings across time orientation is an important driver of the myopic tendencies of affect-based decisions, we believe that this phenomenon is only one facet of a more general property of the affective system. We propose that the affective system is inherently a decision-making system of the present (Pham 2004, 2007); that is, even if the accessibility and intensity of feelings were to be held constant across time frames, consumers would still rely more on their feelings in decisions set in the present than in decisions set in the future or decisions set in the past. This general thesis can be derived from the evolutionary and processing characteristics of the affective, feeling-based system of judgment in relation to the cognitive, reason-based system.

Dual-System Models

A number of dual-system models of reasoning and judgment have been proposed in recent years, including Epstein's (1994) cognitive-experiential self-theory, Sloman's (1996) two systems of reasoning, Stanovich and West's (2000) dual-system model of individual differences, Kahneman and Frederick's (2002, 2005) dual-system model, and Strack and Deutsch's (2004) reflective-impulsive model. Although there are subtle differences among these various dual-system models (Stanovich and West 2000), they typically posit the existence of two systems: one that is primarily affective and feeling based and another that is primarily cognitive and reason

based. These two systems are further characterized by different evolutionary and processing properties (Dijksterhuis and Nordgren 2006; Epstein 1994; Evans 1984, 2006; Kahneman and Frederick 2002, 2005; Lieberman et al. 2002; Sloman 1996; Smith and DeCoster 2000; Stanovich and West 2000; Strack and Deutsch 2004). For example, most dual-system models assume that the affective, feeling-based system lies in a phylogenetically primitive part of the brain, whereas the cognitive, reason-based system is a more recent development and uniquely human (Lieberman et al. 2002; Metcalfe and Mischel 1999; Smith and DeCoster 2000). Compared to the reason-based system, the feeling-based system is additionally assumed to process information in an automatic, quick, and contextualized manner (Epstein 1994; Kahneman and Frederick 2002; Sloman 1996; Smith and DeCoster 2000; Stanovich and West 2000). Recent work in the consumer behavior literature has also started to examine the distinction between the two systems and their effects on evaluations and choices (Lee, Amir, and Ariely 2009; Pham et al. 2001; Shiv and Fedorikhin 1999). For instance, Pham et al. (2001) have found that feeling-based judgments, as compared to reason-based assessments, tend to respond more rapidly and consistently.

The different evolutionary properties and processing characteristics of the two systems suggest that judgments and decisions set in the present tend to preferentially activate the affective system. From an evolutionary perspective, the human mind consists of a set of programs that were designed by natural selection to help our ancestors solve adaptive problems (Cosmides and Tooby 2003). The affective system resides in phylogenetically ancient areas of the brain (e.g., the limbic area) and exhibits substantial commonalities between humans and animals (Epstein 1994; Lieberman et al. 2002). It is acquired by biology or genes over

generations, repeated exposure to the environment, and personal experiences (Epstein 1994; Stanovich and West 2000).

Over the course of evolutionary history, the affective system has guided our ancestors through choices they have faced in their immediate, present environments (Cosmides and Tooby 2000; Pham 2007). Emotions, as programs of the affective system, are designed to help us cope and function adaptively with recurring ancestral situations: identifying valuable opportunities worthy of pursuit and signaling dangerous threats to which the wrong responses would diminish fitness in the environment (Clore, Gasper, and Garvin 2001; Tooby and Cosmides 1990). When confronted by a stimulus, emotions help us determine whether an approach or withdrawal response is functionally adaptive. The affective system is a system that "has been sculpted by the hammer and chisel of adaptation and natural selection to differentiate hostile from hospitable stimuli and to respond accordingly. . . . Affective categorizations and responses are so critical that all enduring species have rudimentary reflexes for categorizing and approaching or withdrawing from certain classes of stimuli" (Cacioppo, Gardner, and Berntson 1999, 839). The affective system is critically designed to help us deal with the present environment. Relative to the affective system, the cognitive system is suggested to be a more evolutionarily recent development and uniquely human (Evans 2006).

The evolutionary past of the two systems is reflected in how the two systems operate and influence behavior. One example comes from how the systems construe the environment. The affective system tends to process information in a contextualized manner in which concepts are represented in a set of features learned from past exposure, and the cognitive system tends to be decontextualized. This feature of the cognitive system allows people to abstract away from their surrounding environments and engage in abstract, hypothetical thinking, constructing mental

simulations of future possibilities that are helpful in planning (Evans 2006; Pham 2004). Thus the cognitive system allows people to generate time perspectives (Strack and Deutsch 2004). Other research has suggested that animals may be "stuck in time," unable to remember past events or predict future events (Roberts 2002), perhaps because animals lack the development of the cognitive system. In summary, evolutionary and processing characteristics of the two systems suggest that the design of the affective system is skewed toward the present orientation, whereas the cognitive system is atemporal and thus has a relatively greater influence on distant times. This notion is also consistent with evidence from research in neuroscience (see McClure et al. 2004). In a functional magnetic resonance imaging study of intertemporal choice, McClure et al. found that areas of the brain commonly associated with affective processes show greater activity when an intertemporal choice includes an immediate reward than a delayed reward (exhibiting a bias to immediacy), but areas of the brain associated with deliberate cognitive processes respond to all intertemporal choices equally.

We therefore propose that because of its original evolutionary emphasis on behavioral choices faced in the immediate, present environment (Epstein 1994; Lieberman et al. 2002), the affective system has retained a distinctive orientation toward the present (Pham 2004, 2007). As a result, the entire affective system of decision making is more likely to be engaged in judgments and decisions that are set in the present than in comparable judgments and decisions that are set in a more distant time, whether in the future or in the past. One prominent—and already well documented—facet of this proposition is the previously mentioned finding that affective feelings that are associated with present options and outcomes are typically more accessible and intense than those associated with options and outcomes that are more temporally distant. However, the general proposition that the affective system is inherently anchored in the present yields

additional predictions. Once the affective system is activated, affective feelings (including moods and emotions) should be more likely to be relied on as a source of information in judgments and decision making. Thus, as an initial test of our general proposition, the present research tests the more specific hypothesis that even when their accessibility or intensity is held constant, affective feelings are weighted more heavily in consumers' judgments and decisions that are set in the present than in equivalent judgments and decisions that are set in the future or in the past.

Indirect support for the general position that the affective system may be inherently anchored in the present comes from several findings indicating a close association between affective feelings and an orientation toward the present (Li 2008; Van Boven et al. 2007; Van Boven, White, and Huber 2009; Van den Bergh, Dewitte, and Warlop 2008). Van Boven et al. (2009) recently observed that immediate emotions were judged to be more intense compared to temporally distant emotions, even when the actual intensity of these emotions was similar. The authors argue that emotion perception exhibits an immediacy bias in two respects: (a) compared with temporally distant emotions, immediate emotions are more salient, thereby making immediate emotions appear more intense, and (b) compared with temporally distant emotions, people may use the greater availability of information about immediate emotions as a signal of greater emotional intensity. In a related work, Van Boven et al. (2007) found that intensity of feelings was negatively correlated with perceived psychological distance: the more intensely people felt about an event, the lower its perceived psychological distance. In the marketing domain, Van den Bergh et al. (2008) and Li (2008) recently observed that exposure to appetitive stimuli—such as pictures of women in bikinis shown to heterosexual men or pictures of rich desserts and scents of cookies—can lead to increased present orientation in the decision-making

process, resulting in greater consumption impatience in unrelated behavioral domains. While these studies collectively suggest a close association between affective feelings and a present orientation, these studies differ from those reported in the present research in two important respects. First, these previous studies focus primarily on how the experience of feelings influences the decision maker's time orientation (a causal chain from feelings to time orientation), whereas our research investigates how a given time perspective influences the reliance on feelings (a causal chain flowing in the opposite direction: from time orientation to feelings). Second, these previous studies focus primarily on the *intensity* of the feelings (or visceral drive) as the causal determinant of time orientation, whereas in our research, the intensity of the feelings is held constant across time orientation. Our study focuses on the differences in the weight people attach to their feelings across time perspectives rather than on differences in intensity (or scale value) across time perspectives. (One could argue that our predictions could also be seen from the lenses of construal level theory [Trope and Liberman, 2003], which has gained increasing popularity in consumer research recently. We shall return to this issue in the general discussion.)

Overview of the Experiments

We conducted six experiments involving over 553 participants to test the hypothesis that affective feelings are weighted more heavily in judgments and decisions that are set in the present than in equivalent judgments and decisions that are set in the future or in the past. In all experiments, the main independent variable was the time perspective that participants were encouraged to have when making their judgments or decisions. Importantly, the accessibility and

intensity of the affective feelings associated with the options were held constant across time perspectives. The first four experiments examine the differential reliance on integral and incidental affective feelings in decisions set in a near future versus a more distant future. The last two experiments examine the differential reliance on incidental affective feelings in evaluations set in a recent past versus a more distant past. Experiments 1 and 1B show that in a choice between an affectively superior apartment and a cognitively superior apartment, preference for the affectively superior apartment is greater in a near future than in a more distant future. Consistent with the idea that it is the weight of affect per se that increases in the present compared to the future, experiment 2 shows that incidental mood states have stronger mood-congruent influence on consumers' intention to rent a given apartment and willingness to pay for this apartment if the apartment is to be rented in a near future than if it is to be rented in a more distant future. Providing more process-related evidence, experiment 3 shows that consumers find the reliance on feelings (as opposed to reasons) more "natural" in decisions set in a near future than in decisions set in a more distant future. Whereas the first four experiments examine the differential reliance on integral and incidental feelings under a near-future versus distant-future perspective, the last two experiments examine the differential reliance on incidental feelings under a recent-past versus distant-past perspective. Experiment 4 shows that compared to a more distant past, a recent past increases the influence of incidental moods on consumers' evaluations and willingness to pay, suggesting that the greater reliance on feelings in the present applies not only compared to the future but also compared to the past. Finally, experiment 5 shows that evaluations of a vacation that happened recently are more likely to be influenced by incidental moods than by evaluations of a vacation that happened a long time ago, further indicating a greater reliance on feelings in the present as compared to the distant past.

EXPERIMENT 1: INFLUENCE OF INTEGRAL FEELINGS IN NEAR VERSUS DISTANT FUTURE

This experiment tests the basic prediction that consumers are more likely to rely on their integral feelings toward the options when the decision horizon involves a near future than when it involves a more distant future, even if the accessibility of the feelings is held constant across time perspectives. This prediction was tested in the context of a choice between two apartments to rent: one that was affectively superior and one that was cognitively (functionally) superior. Given this choice set, if an orientation toward the present indeed increases the reliance on affective feelings in judgments and decisions, relative preferences for the affectively superior apartment should increase. It was therefore predicted that participants choosing between these two apartments for the near future would exhibit greater relative preference for the affectively superior apartment than participants choosing between these two apartments for a more distant future.

Method

Participants and Design. Sixty-one university students (51% women, average age 25.3 years) were randomly assigned (between-subjects) to either a near-future or a distant-future condition. They were paid $5 each for their participation.

Procedure. All participants were asked to imagine that they were about to graduate, had found a well-paying job after graduation, and were looking for a one-bedroom apartment to rent

after graduation (see appendix A). As a manipulation of time perspective, participants were asked to imagine that their graduation would take place either in one month (near-future condition) or in a year and one month (distant-future condition), consistent with the university's actual calendar; that is, all participants were asked to assume the same economic reality—searching for an apartment after landing a well-paying job just out of college—but for some of the participants, this economic reality was set in a near future, whereas for others, this reality was set in a more distant future. All participants then reviewed the description of two apartments. Each apartment was a one-bedroom apartment; the apartment descriptions contained five attributes and included a picture of the apartment's interior. In addition to the picture, which conveyed the apartment's attractiveness and look, two of the five attributes were expected to vary the feelings associated with the apartment: the amount of natural light and the views from the apartment. The remaining three attributes were expected to manipulate cognitive or functional desirability of the apartment: its monthly rent, its access to public transportation, and its size. One apartment, apartment A, was designed to be superior on the cognitive-functional dimensions (lower rent, larger square footage, and greater proximity to public transportation); the other, apartment B, was designed to be superior on the affective dimensions (better views, more sunlight, and more attractive picture).

As a first dependent measure, participants were asked to rate their relative preference for the two apartments on a 7-point scale ranging from 1 (strongly prefer apartment A) to 7 (strongly prefer apartment B). Higher scores thus indicated a relatively greater preference for the affectively superior option. As a second dependent measure, participants were asked to choose between the two apartments: A or B. It was predicted that relative preference for and choice of

the affectively superior apartment would be greater in the near-future condition than in the distant-future condition.

Various manipulation and confounding checks were then administered. To check for the effectiveness of the time perspective manipulation, participants were asked to rate the time period on which they focused on two 9-point items anchored at "next month/one year from now" and "the very near/very distant future" ($\alpha = .82$). Participants' task involvement was assessed on three 9-point agree-disagree items (e.g., "I went through the choices as if I was really choosing an apartment rental"; $\alpha = .87$). Participants' mood states were assessed on five 9-point items (e.g., "good/bad," 'unpleasant/pleasant"; $\alpha = .95$). Finally, participants reported basic background information, including their proximity to graduation.

Pilot Test. To verify that the stimuli manipulated the affective and cognitive superiority of the apartments as intended, an independent group of 42 participants from the same population were asked to evaluate the two apartments using specific judgment-process instructions developed by Pham et al. (Pham et al. 2001). One group was asked to rate and choose between the two apartments based on reason and logical assessment; the other group was asked to rate and choose between the two apartments based on feelings. As expected, compared to participants instructed to rely on reason and logical assessment, participants instructed to rely on their feelings had higher relative preferences for the affectively superior apartment B (3.04 vs. 4.70; $F(1, 40) = 6.55$, $p < .02$). They were also more likely to choose apartment B over the cognitively superior apartment A (55.0% vs. 13.6%; $Z = 3.11$, $p < .01$). These pilot results thus confirm that preferences between the two apartments are indeed indicative of differential reliance on feelings versus reasons.

Results

Preliminary Checks. When prompted, none of the participants correctly guessed the hypothesis of the study. As expected, participants reported a significantly greater focus on the future in the distant future condition ($M = 5.30$) than in the near-future condition ($M = 3.50$; $F(1, 55) = 7.92$, $p < .01$). The time frame manipulation did not influence participants' level of involvement and mood (Fs < 1).

Relative Preference and Choice. As expected, participants' relative preferences for the affectively superior apartment were higher in the near-future condition than the distant-future condition (3.45 vs. 2.25; $F(1, 55) = 5.85$, $p < .02$; see figure 1A). Participants' choices exhibited a similar pattern. Participants were almost three times more likely to choose the affectively superior apartment in the near-future condition (P = 31.01%) than in the distant-future condition (31.01% vs. 10.71%; $Z = 1.96$, $p = .05$).

Insert figure 1 about here

Discussion and Replication (Experiment 1B)

Participants given a choice between an affectively superior option and a cognitively superior option were found to exhibit stronger relative preference for and choice of the affectively superior option if the decision was framed in a near future than if it was framed in a distant future; that is, participants appeared to be more influenced by the affective value of the options when the decision was set closer to the present than when it was set further in the future.

This effect was observed even though the stimuli were identical across time perspectives, and therefore the accessibility and intensity of feelings evoked by the two options were presumably constant across time perspectives. These results provide initial evidence that consumers' tendency to rely on their integral feelings toward the options in decision making is stronger when the time frame of the decision is closer to the present than when it is in a more distant future.

One potential limitation of this first study is that the manipulation of time perspective was somewhat heavy-handed, raising the possibility of demand artifacts (although the demand check indicated no evidence of that). To address this issue, this experiment was replicated in a follow-up experiment (experiment 1B) using a more subtle manipulation of time perspective. Forty-seven student participants who were actually to graduate in either one month or one year and one month were shown the same two apartments as in experiment 1. Prior to assessing their preferences and making their choices, they were asked to think about their actual graduation time and imagine that they had to choose between the two apartments shortly after graduation. As illustrated in figure 1B, the results were almost identical. Participants who were to graduate in one month showed greater relative preferences for the affectively superior apartment than those who were to graduate the following year (3.20 vs. 1.81; $F(1, 45) = 8.92$, $p < .01$). Participants who were to graduate in one month also indicated significantly greater relative choice share for the affectively superior option than participants who were to graduate the following year (30.00% vs. 7.40%; $Z = 1.98$, $p < .05$). To gain insight about the process underlying these findings, participants were additionally asked to indicate how they made their rental decisions on two 7-point agree-disagree items: (a) "I made my decision of which apartment to rent based on *how I would feel* toward living in the apartments" and (b) "I made my decision of which apartment to rent based on the *logical balance of pros and cons* of living in the apartments."

Responses to these two items were averaged into a composite scale where high scores indicated greater reliance on feelings to make the rental decision and low scores indicated greater reliance on logical assessments. Consistent with the predictions, participants who were to graduate in one month indicated having placed marginally greater reliance on feelings (as opposed to logical assessments) than participants who were to graduate in 13 months (3.20 vs. 1.63; $F(1, 45) = 3.71$, $p = .06$). This conceptual replication suggests that the effects observed in experiment 1 are not only reliable but also unlikely to be due to demand characteristics. Moreover, the process results suggest that the greater relative preference for the affectively superior option was driven by a greater reliance on feelings as opposed to logical assessments when the time perspective was closer to the present.

EXPERIMENT 2: INFLUENCE OF INCIDENTAL FEELINGS IN NEAR VERSUS DISTANT FUTURE

Experiments 1 and 1B relied on an *integral* manipulation of affect toward the options (Bodenhausen 1993), which entailed a variation of the information provided across options (see Shiv and Fedorikhin [1999] for a similar strategy). One limitation of this design strategy is that—Experiment 1B's process results notwithstanding—one cannot be certain that the effects of time perspective on preference were really driven by a differential reliance on affect across time perspectives as opposed to a differential influence of some other correlates of the affect manipulation (e.g., the size of the apartments). To provide further evidence that it is indeed the reliance on affect *in particular* that varies across time perspectives, this second experiment uses an *incidental* manipulation of affect that allows information about the options to be held constant (see Pham [1998] for a similar strategy).

Given that people often misattribute incidental feelings from preexisting mood states as feelings elicited by the target (Schwarz and Clore 1996), consumers should also be more likely to rely on incidental, mood-induced feelings in decisions set closer to the present than in decisions set in a more distant future. To test this prediction, participants whose mood states were manipulated through a supposedly unrelated task were asked to evaluate whether they would rent a given apartment after graduating either in the near future or in a more distant future. It was expected that participants' moods would exert a stronger mood-congruent influence in the near-future condition than in the more-distant-future condition. Given that the focal option remained identical across conditions, such a finding would support the interpretation that it is the weight of affective feelings per se that varies across time perspectives. Moreover, given that participants' moods were manipulated orthogonally to their time perspectives, such a finding would provide additional evidence that the effects of time perspective on the reliance on affect hold even if the accessibility of people's feelings is held constant across time perspectives.

Method

Participants and Design. A total of 104 university students (56% women, average age 23.3 years) who were paid $7 for their participation were randomly assigned to one of four conditions of a 2 (Mood: Positive vs. Negative) × 2 (Time Perspective: Near Future vs. Distant Future) between-subjects design.

Procedure. The experiment was administered as two supposedly unrelated studies. In the first study, participants' mood states were manipulated using the same procedure as in Avnet and

Pham (2007). Under the pretense of studying people's ability to comprehend the gist of short clips, participants were asked to view and rate two movie clips. The first clip was a neutral documentary excerpt that was common across conditions. Its purpose was to neutralize any preexisting moods, disguise the mood manipulation introduced in the second clip, and reinforce the cover story. In the positive mood condition, the second clip was an excerpt from a Bill Cosby stand-up comedy performance. In the negative mood condition, the second clip consisted of selected scenes from the movie *Lorenzo's Oil,* a movie about a child stricken by a terrible disease. After viewing each clip, participants were asked to answer a series of comprehension questions designed to reinforce the cover story. Although this manipulation has already been tested in previous research (Avnet and Pham 2007), it was further assessed in a separate pretest among 50 participants (50% women). After viewing the videos, pretest participants were asked to indicate their momentary feelings on six 7-point items (e.g., "unhappy/happy," "bad/good," "unpleasant/pleasant"; $\alpha = .98$). As expected, participants who had watched the *Lorenzo's Oil* video reported feeling less pleasant ($M = 2.70$) than participants who had watched the Bill Cosby's video ($M = 4.89$; $F(1, 48) = 33.67$, $p < .0001$), confirming the effectiveness of this mood manipulation.

In the supposedly unrelated second study, participants were shown the description of a *single* apartment and were asked to assess whether they would rent it after graduation. The described apartment was the same as the affectively superior apartment (apartment B) in experiment 1. Participants' time perspective (near future or distant future) was manipulated in the same way as in experiment 1. As the main dependent measures, participants rated their intention to rent this apartment after graduation on a 9-point scale ranging from 1 (definitely not rent) to 9 (definitely rent) and indicated how much monthly rent they would be willing to pay for

this apartment. The same manipulation and confounding checks as in experiment 1 were then collected, along with some background information.

Results

Preliminary Checks. Again, when prompted, none of the participants correctly guessed the hypothesis of the study. As expected, participants indicated greater future-orientation in the distant future condition ($M = 6.36$) than in the near future condition ($M = 4.17$; $F(1, 103) = 20.86$, $p < .0001$). All other effects were nonsignificant (Fs < 1). In addition, participants' levels of involvement did not differ across conditions (all Fs < 1).

Behavioral Intention and Willingness to Pay. If proximity to the present encourages the reliance on feelings in judgments and decisions, evaluations should be more influenced by incidental mood states if performed under a near-future time perspective than if performed under a distant-future time perspective. Consistent with this prediction, participants' intentions to rent the apartment exhibited a significant Mood × Time perspective interaction ($F(1, 103) = 5.93$, $p < .02$; see figure 2). Simple-effect tests showed that participants' mood states had a significant mood-congruent effect on their intentions in the near-future condition ($M_{Positive} = 5.28$ vs. $M_{Negative} = 3.72$; $F(1, 103) = 7.14$, $p < .01$) but not in the distant-future condition ($F < 1$). This is consistent with the idea that feelings that are (here, mistakenly) attributed to the target are weighted more heavily in decisions that are set closer to the present than in identical decisions set in a more distant future. (Neither of the main effects approached significance: both ps > .14).

Insert figure 2 about here

Participants' willingness to pay for rent exhibited a similar pattern. A significant Time Perspective × Mood interaction ($F(1, 103) = 4.94$, $p < .03$) showed that participants' moods had a stronger mood-congruent influence on their willingness to pay in the near-future condition ($M_{Positive}$ = \$1,916 vs. $M_{Negative}$ = \$1,589; $F(1, 103) = 5.35$, $p < .03$) than in the distant-future condition ($M_{Positive}$ = \$1,721 vs. $M_{Negative}$ = \$1,840; $F < 1$). Main effects of time perspective and mood again were nonsignificant (both ps > .30).

Discussion

Experiment 2 provides additional evidence that consumers whose time perspectives are closer to the present are more likely to rely on their feelings to make judgments and decisions than consumers whose time perspectives are set in a more distant future. This effect occurs even when (a) the feelings are in fact incidental to the target because people often mistake such feelings as genuine integral feelings toward the target and (b) the target of evaluation and its associated information are held constant. This experiment confirms that it is indeed the weight of affective feelings that increases when decisions are set closer to the present. In addition, given that participants' moods were manipulated independently of their time perspectives, the experiment shows again that this phenomenon occurs even if the accessibility of the feelings is held constant across time perspectives.

EXPERIMENT 3: NATURALNESS OF FEELING-BASED VERSUS REASON-BASED JUDGMENT IN NEAR VERSUS DISTANT FUTURE

This experiment attempts to provide further process evidence for the proposed explanation of the first two experiments' findings. Participants whose time perspectives were manipulated as in the previous experiments were asked to choose between the same two apartments as in experiment 1. Unlike in previous experiments, participants were instructed to follow a specific judgment process to make their choice. They were instructed to use either a feeling-based process or a reason-based process. It was expected that a feeling-based process would be easier to adopt under a near-future time perspective than under a more distant-future time perspective. This is because we hypothesize an inherent affinity between a present time orientation and a reliance on feelings in judgment. In contrast, a reason-based process should be equally easy (or difficult) to adopt regardless of time perspectives. This is because cognitive modes of judgment should be more atemporal (Pham 2004). Therefore the pattern of results was expected to suggest that the spontaneous reliance on feelings was inherently more natural in the present than in the future.

Method

Participants and Design. Sixty-four university students (58% women, average age 24.3 years) were randomly assigned (between subjects) to either a feeling-based process condition or a reason-based process condition. They were additionally categorized as either near-future oriented if their anticipated graduation was in a few weeks or distant-future oriented if their anticipated graduation was the following year.

Procedure. Participants were asked to evaluate the same two apartments as in experiment 1 as potential rental options after they graduate from college. The procedure was similar to that of experiment 1 with two important differences. First, instead of manipulating time perspective by asking participants to assume a given time of graduation, participants were asked to think about their *actual* time of graduation, as in experiment 1B. Half the participants were about to graduate in a few weeks; the other half expected to graduate in the following year. Second, instead of being allowed to use whatever process they wanted to make their decisions, participants were asked to follow a specific judgment process. Consistent with the procedures validated by Pham et al. (2001), half the participants received detailed *feeling*-based instructions, encouraging them to make their decisions based on how they would feel toward living in each apartment; the other half received *reason*-based instructions, encouraging them to make their decisions based on reason and logical arguments about living in each apartment. After reading these process instructions and reviewing the descriptions of the same two apartments as in experiment 1, participants were administered the same dependent measures as in experiment 1. First, they rated their relative preference for the two apartments on a 7-point scale ranging from 1 (strongly prefer apartment A) to 7 (strongly prefer apartment B). Higher scores again indicated greater preference for the affectively superior option. Next, they indicated their choice between the two apartments (A or B). As a process measure, participants were asked to describe how they made their decision by rating their agreement with two items: (a) "I made my decision of which apartment to rent based on *how I would feel* toward living in the apartments" and (b) "I made my decision of which apartment to rent based on the *logical balance of pros and cons* of living in the apartments."

Participants were categorized as near-future oriented or distant-future oriented based on their anticipated year of graduation, which they were asked to indicate at the end of the study: either in a few weeks (in 2008) or the following year (in 2009).

Results

Relative Preference and Choice. Participants' relative preferences for the two apartments revealed a predictable main effect of process instruction, whereby feeling-based instructions promoted greater relative preferences for the affectively superior apartment than reason-based instructions (3.92 vs. 2.80; $F(1, 60) = 4.61$, $p < .05$). In addition, consistent with the results of experiments 1 and 1B, a marginally significant main effect of time perspective ($F(1, 60) = 2.87$, $p < .10$) indicated that closer proximity to graduation resulted in slightly greater relative preferences for the affectively superior apartment (3.80 vs. 2.92). (That this effect was only marginally significant is not surprising given that, unlike in experiment 1, in this study participants were instructed to follow a specific judgment process that need not have coincided with the process they would naturally follow.)

More important, these main effects were qualified by a significant interaction between time perspective and process instructions ($F(1, 60) = 7.44$, $p < .01$). As illustrated in figure 3, among participants who were to graduate in a few weeks, preference for the affectively superior option was stronger if they were instructed to rely on their feelings ($M = 5.07$) than if they were instructed to rely on their reasons ($M = 2.53$; $F(1, 60) = 11.88$, $p < .005$). In other words, when decisions are set closer to the present, people can readily rely on their feelings if they are asked to. However, among participants who were to graduate only in a year, preferences were

comparably skewed toward the cognitively superior option, whether participants were explicitly instructed to rely on their feelings (M = 2.76) or were instructed to rely on their reasons (M = 3.07, $F < 1$). This interaction suggests that it is more difficult (or less natural) to rely on feelings in decisions set in a more distant future than in decisions set closer to the present.

Insert figure 3 about here

Judgment Process. A composite process measure was created by taking the difference between the degree to which participants stated that they relied on their feelings toward the apartments to make their decisions and the degree to which they stated that they relied on the balance of pros and cons of the apartments. As in experiment 1B, a higher score on this measure indicated greater relative reliance on feelings versus reasons. As expected, participants reported greater reliance on feelings (vs. reasons) in the feeling-instructions condition than in the reason-instructions condition (–.48 vs. –2.25; $F(1, 60) = 5.49$, $p < .03$), confirming that the process instructions were effective. More important, participants also reported greater reliance on feelings (vs. reasons) if their graduation was close than if their graduation was more distant (–.42 vs. –2.31; $F(1, 60) = 6.25$, $p < .02$). This main effect of time perspective on the process that participants used to make their decisions is consistent with the proposition that reliance on affect is more natural in decisions that are closer to the present than in decisions that are more distant. Interestingly, there was no interaction between process instructions and time perspectives ($F(1, 60) = 1.11$, $p = .30$), suggesting that process instructions and time perspectives had additive effects on participants' self-reported reliance on feelings.

Discussion

This experiment provides two types of evidence consistent with the hypothesis that reliance on affect is greater in judgments and decisions that are set closer to the present than in those that are set in a more distant future. First, it was found that participants whose natural time perspectives were closer to the present indeed exhibited stronger preference for the affectively superior option if instructed to rely on their feelings than if instructed to rely on their reasons. In contrast, participants whose natural time perspectives were of a more distant future exhibited preferences that were comparably skewed toward the cognitively superior option regardless of whether they were instructed to rely on their feelings or their reasons. This interaction suggests that whereas people can readily rely on their feelings when the decision is set closer to the present, reliance on feelings is more difficult when the decision is set in a more distant future. In addition, participants spontaneously reported placing greater reliance on their feelings when the decision involved a near future than when it involved a more distant future. Therefore the reliance on feelings appears to be more natural in decisions set near the present than in decisions set in a more distant future.

EXPERIMENT 4: INFLUENCE OF INCIDENTAL FEELINGS IN RECENT VERSUS DISTANT PAST

The first three experiments examined the differential influence of (reliance on) feelings in a near future compared to a distant future. If the affective system is inherently a decision system of the present, parallel effects should be observed when comparing the influence of feelings under a recent past time frame versus a distant past time frame. As in experiment 2, we

investigated this issue by using an incidental mood manipulation of affective feelings. To generalize the previous experiments' findings to a different decision domain, this experiment examined this issue in the context of evaluations of video games. If proximity to the present promotes a greater reliance on feelings as inputs to judgments and decisions, consumers' incidental mood states should exert a stronger mood-congruent influence on evaluations of video games appraised with a recent-past perspective than on evaluations of video games appraised with a distant-past perspective. A parallel moderation of recent versus distant past on the reliance on feelings would further differentiate our main theoretical proposition from previous findings suggesting that affect promotes impatience.

Method

Participants and Design. A total of 103 university students (51% women, average age 22.9 years) who received $5 for their participation were randomly assigned to one of four conditions of a 2 (Mood: Positive vs. Negative) × 2 (Time Perspective: Recent Past vs. Distant Past) between-subjects design.

Procedure. The experiment was administered as two supposedly unrelated studies. In the first study, participants' moods were manipulated using the same Avnet and Pham (2007) procedure as in experiment 2. The supposedly unrelated second study was allegedly about consumers' evaluations of various media. Participants were told that the researchers were interested in participants' evaluations of a team of video game designers based on a selection of games the team had developed. All participants were asked to evaluate the same set of video

games: Pong, Combat, and Duck Hunt. Each game was illustrated by a screenshot and a brief description of the game. To trigger different time perspectives, participants in the recent-past condition were told that the "games were created, developed, and released *recently . . . since 2007,*" whereas participants in the distant-past condition were told that the "games were created, developed, and released *in the past . . . in the early 1980s*" (emphasis added). The various games' screenshots and ostensible release dates were also varied, with sharper graphics and more recent release dates in the recent-past condition than in the distant-past condition (see appendix B). The rest of the information was identical across conditions. As the main dependent measure, participants were asked to evaluate the selection of games produced by the team on five 7-point scales such as "These games are good/not good," "I find the games uninteresting/interesting," and "I like/do not like the games they developed" ($\alpha = .92$). Additional confounding, manipulation, and demand checks were collected: (a) levels of involvement on four agree-disagree items such as "I found the task of evaluating these games very interesting" ($\alpha = .79$); (b) moods after watching the video clips on five 7-point items such as "bad/good" ($\alpha = .94$); and (c) guesses of the purpose of the study. Finally, participants reported basic background information such as age and gender.

Pilot Test. To verify that the video game stimuli triggered different past time perspectives, an independent group of 50 participants (50% women) was asked to evaluate the same three video games based on the same descriptions as in the main study (appendix B). As a manipulation check, participants rated whether they thought the games were released recently or a long time ago on three 7-point items (e.g., "the very recent past/the very distant past," "not that long ago/a long time ago"; $\alpha = .74$). In addition, they described the time periods on which they

focused when assessing the video games on another three 7-point items (e.g., "about 20 years ago/about 2 years ago," "the very distant past/the very recent past"; α = .89). Compared to participants in the distant-past condition, participants in the recent-past condition indeed thought the games were developed and released more recently (2.60 vs. 3.43; $F(1, 48) = 5.62$, $p < .03$). In addition, participants in the recent-past condition reported focusing on a more recent time period ($M = 4.54$) when evaluating the games compared to participants in the distant past condition ($M = 2.84$; $F(1, 48) = 21.61$, $p < .0001$). These pilot test results confirm that the stimuli did trigger different past perspectives.

Results

Preliminary Checks. Data from three participants who did not watch the mood-inducing videos and two participants who suspected a relationship between the two ostensibly unrelated studies were removed, leaving 98 observations. As expected, participants reported feeling more pleasant in the positive mood condition ($M = 5.05$) than in the negative mood condition ($M = 3.52$; $F(1, 94) = 32.83$, $p < .0001$). There were no other effects of the manipulations on self-reported mood ($ps > .22$). In addition, participants' level of involvement in the study did not differ across the conditions (all $ps > .16$).

Evaluation of Video Games. Participants evaluated the games more favorably when led to believe that the games were created in the early 1980s ($M = 5.21$) than when led to believe that the games were created more recently ($M = 3.42$; $F(1, 94) = 46.08$, $p < .0001$), suggesting higher expectations from video games that were ostensibly more recent. In addition, evaluations were

more favorable in the positive-mood condition ($M = 4.70$) than in the negative-mood condition ($M = 3.97$; $F(1, 94) = 7.93$, $p < .01$), consistent with previous mood-congruent evaluation findings. More central to this research, this main effect of mood was again qualified by an interaction with time perspective ($F(1, 94) = 4.11$, $p < .05$). As illustrated in figure 4, participants who were primed to adopt a more recent-past perspective gave significantly higher evaluations of the games if they were in a positive mood ($M = 4.06$) than if they were in a negative mood ($M = 2.78$; $F(1, 94) = 11.49$, $p < .001$), suggesting that they relied on their momentary feelings as an input to their evaluations. In contrast, participants who were prompted to adopt a more distant-past perspective gave comparable evaluations of the games regardless of their moods (5.31 vs. 5.10; $F < 1$), suggesting that they did *not* incorporate their momentary feelings into their evaluations. Once more, this pattern of results was observed despite the fact that participants' feelings after watching the mood-inducing clips were presumably the same whether they were in the distant-past condition or in the recent-past condition. This is again consistent with the hypothesis that consumers place greater weight on their momentary feelings in judgments and decisions with a time perspective closer to the present than in judgments and decisions with a time perspective that is more distant.

Insert figure 4 about here

Alternative Explanation. One could argue that the absence of mood effect in the distant-past condition may have been due to a ceiling effect in this condition. This alternative explanation seems unlikely because a reanalysis of the data using the method of successive intervals, which is largely insensitive to floor and ceiling effects (Edwards and Thurstone 1952; Schwarz et al. 1987), uncovered essentially identical results: the simple effect of mood in the distant past condition remained nonsignificant ($p = .57$).

Discussion

This experiment converges with and extends the previous experiments' findings in two ways. First, it tests the basic hypothesis in a different domain: that of evaluations of video games as opposed to evaluations of apartment rentals. More important, whereas the first three experiments document the influence of different *prospective* time horizons on the reliance on feelings in judgments and decisions, this experiment documents a parallel influence of different *retrospective* time horizons. Paralleling the results of experiment 2, evaluations of the video games exhibited significant interaction between participants' moods and participants' (retrospective) time perspectives. Participants' moods were more influential among those who were encouraged to adopt a more recent-past perspective than among those who were encouraged to adopt a more distant-past perspective. This finding is again consistent with the idea that proximity to the present encourages the reliance on feelings in judgments and decision making even if the accessibility and intensity of the feelings are held constant across time perspectives.

EXPERIMENT 5: INFLUENCE OF INCIDENTAL FEELINGS IN RECENT VERSUS DISTANT PAST

The purpose of this final experiment was to conceptually replicate the findings of experiment 4 and extend them to the domain of evaluations of personal experiences (as opposed to external products). Student participants were first asked to describe a spring break vacation

from either a recent past or a distant past. Their incidental feelings were next manipulated through an ostensibly unrelated task. Participants were then asked to evaluate the spring break vacation they had just described. If compared to a distant past perspective, a more recent past perspective increases the reliance on incidental feelings, participants' moods should have stronger influence on their evaluations of a recent spring break than on their evaluation of a distant past spring break.

Method

Participants and Design. Eighty-two university students (51% women, average age 24.3 years) who were paid $8 were randomly assigned to one of four conditions of a 2 (Mood: Positive vs. Negative) × 2 (Time-Perspective: Recent Past vs. Distant Past) between-subjects design.

Procedure. The alleged purpose of the study was to understand how well people can remember significant events in their lives. All participants were asked to recall and describe a past spring break vacation. Participants in the recent-past condition were asked to recall and describe the spring break vacation that happened a few weeks earlier, whereas those in the distant-past condition were asked to recall and describe the spring break vacation that happened two years earlier. All participants were instructed to provide a description between 130 and 180 words, which a pretest had shown to be a sensible length for such descriptions. The purpose of requesting descriptions of a specific length was to standardize the level of detail of the memories participants described across time perspective conditions.

Participants were then told that they would be given a distracter task before answering additional questions about the described spring break. The distracter task was in fact the Avnet and Pham (2007) movie-based mood manipulation also used in experiments 2 and 4. The purpose of administering the mood manipulation *after* participants had described their spring vacations was to reduce the possibility that any effect of mood on evaluations could be due to mood-congruent recall (Isen et al. 1978). After their moods were manipulated, participants were presented with the spring break vacation descriptions that they had written earlier. They were asked to review their vacation descriptions and evaluate the vacations on seven 7-point items (e.g., "I did not have/I had a good time," "It was disappointing/gratifying"; $\alpha = .97$), which were averaged into an overall evaluation of the vacation and formed the main dependent measure.

Again, several manipulation and confounding checks were collected. To verify that participants had different time perspectives, they were asked to rate on three 7-point items whether they thought about the situation as something that happened recently or a long time ago (e.g., "very recent past/very distant past," "just happened/long time ago"; $\alpha = .93$). To check the effectiveness of mood manipulation, participants were asked to rate their feelings after watching the critical video on five 7-point items (e.g., "bad/good," "unpleasant/pleasant"; $\alpha = .97$). Level of involvement was measured by two 7-point agree-disagree items: "I tried as hard as I can to recall the details of my past spring break vacation" and "I thought about my past spring vacation very carefully" ($\alpha = .77$). A demand check was also included, along with some basic demographic assessments.

Results

Preliminary Checks. When asked, none of the participants correctly guessed the hypothesis of the study. As expected, participants' subjective time perspectives were more past oriented in the distant-past condition than in the recent-past condition (4.36 vs. 3.31; $F(1, 78) = 6.18$, $p < .02$). Interestingly, a main effect of mood also indicated that the recalled spring break seemed more recent in the positive mood condition than in the negative mood condition (3.34 vs. 4.33; $F(1, 78) = 5.40$, $p < .05$). There interaction between time perspective and mood was not significant ($F < 1$). Also, as expected, participants reported feeling more pleasant after watching Bill Cosby's standup comedy (M = 5.38) than after watching scenes from *Lorenzo's Oil* (5.38 vs. 2.57; $F(1, 78) = 90.27$, $p < .0001$). Other effects were not significant (ps > .11). Finally, there were no main or interaction effects of the manipulations on reported levels of involvement (all ps > .14).

To control for heterogeneity in participants' spring break experiences, two independent coders (who were blind to the experimental hypothesis) coded participants' descriptions into one of three categories: (a) "went somewhere for spring break" (59.03%), (b) "stayed at home for spring break" (26.51%), and (c) "worked during spring break" (14.46%; $\kappa = 0.87$, disagreement resolved by a third independent rater). Because this categorical measure was understandably correlated with participants' evaluations of their spring breaks ($F(2, 80) = 14.40$, $p < .0001$), it was controlled for as a covariate in the main analyses.

Evaluation of Overall Spring Break. Participants' overall evaluation of their past spring break was submitted to a 2 (Time Perspective) × 2 (Mood) ANCOVA with a covariate

controlling for how participants occupied the spring break. The analysis uncovered no main effects of time perspective or mood (*p*s > .23). Verifying the main predictions of this experiment, results showed a significant Time Perspective × Mood interaction ($F(1, 76) = 4.21$, $p < .05$). As illustrated in figure 5, participants' moods had a stronger mood-congruent influence on their evaluations of the more recent spring break ($M_{Positive} = 5.87$ vs. $M_{Negative} = 4.78$; $F(1, 76) = 4.28$, $p < .05$) than on their evaluations of the more distant spring break ($M_{Positive} = 4.72$ vs. $M_{Negative} = 5.03$; $F < 1$). Therefore participants appeared to rely more on their momentary feelings as information when evaluating a recent spring break but not when evaluating an earlier spring break. This is consistent with the hypothesis that people place greater weight on their feelings as informational inputs when making evaluations and decisions whose time perspective is closer to the present as opposed to set in a more distant past.

Insert figure 5 about here

Discussion

Experiment 5's results converge with those of experiment 4 in supporting the prediction that a more recent past perspective increases the reliance on feelings in evaluations compared to a more distant past perspective. Whereas in experiment 4, this effect was observed with an external target object (video games), in this experiment, the effect was observed with an autobiographical experience. The specificity of the observed pattern of findings and the high convergence of results between these two experiments despite their very different operationalizations place strong constraints on possible alternative explanations. For example, it seems unlikely that the results were due to mood-congruent recall. First, in this experiment, mood was manipulated *after* participants were asked to recall and describe their experiences.

Second, in experiment 4, there was fairly little for participants to recall as the target information (about the video game) was externally provided. More important, it is difficult to see why mood-congruent recall would operate more when the experience or external target is recent than when it is more distant. An affect-as-information explanation can account for such an interaction more easily (Pham 1998; Schwarz and Clore 1983). More generally, the parallel evaluative effects of moods in recent pasts and near futures compared to distant pasts and distant futures support the hypothesis that consumers make greater reliance on their momentary feelings in judgments and decisions that are closer to the present, whether they are looking forward or backward in time.

GENERAL DISCUSSION

Building on previous empirical findings that affect-based decisions tend to be more myopic than reason-based decisions (Loewenstein 1996; Metcalfe and Mischel 1999), it has been speculated that affect is inherently a decision-making system of the present (Pham 2004, 2007). This research provides an initial attempt to verify this theoretical claim. We propose that the entire affective system is indeed more likely to be engaged in judgments and decisions set in the present than in judgments and decisions set either in the future or in the past. One aspect of this engagement is the reliance on feelings as inputs in judgments and decisions. The present set of studies tested the specific hypothesis that, as a result of the greater engagement of the affective system in the present, consumers are more likely to rely on their feelings in judgments and decisions set in the present than in comparable judgments and decisions set in the future or in the past. This occurs even when accessibility of feelings is held across time horizons.

Consistent support for this hypothesis was found across five experiments and one conceptual replication. It was found in experiments 1 and 1B that integral affect toward choice options plays a greater role if the decision is set in a near future than if it is set in a more distant future. The same phenomenon was observed in experiment 2 with incidental feelings. Incidental mood states exerted a stronger mood-congruent influence on behavioral intentions and willingness to pay when a near-future perspective was adopted than when a distant-future perspective was adopted. This is consistent with the idea that consumers are more likely to rely on their momentary affective feelings as inputs when judgments and decisions are set closer to the present than when they are set in the future. The process-focused findings of experiment 3 converge with this interpretation. Whereas participants who were explicitly instructed to rely on reason and logical assessment to make their decisions were equally likely to do so under a near-future perspective as under a distant-future perspective, participants who were instructed to rely on their feelings were much more likely to do so under a near-future perspective than under a distant-future perspective. This finding suggests that the reliance on feelings is more natural when the time perspective is closer to the present than when the time perspective is set in the distant future. Finally, results from experiments 4 and 5 suggest that the greater reliance on feelings in judgments and decisions that are anchored in the present also hold in comparison to the past. Incidental mood states were found to exert a stronger mood-congruent influence on evaluations of a product and past personal experiences among participants who were encouraged to adopt a more recent-past perspective than among those who were encouraged to adopt a more distant-past perspective.

These results appear to be robust and rather general. They were observed in three different decision domains—evaluations of apartments (experiments 1–3), evaluations of video

games (experiment 4), and evaluations of past vacations (experiment 5)—with both integral feelings evoked by the options (experiments 1–3) and incidental feelings arising from preexisting mood states (Experiments 2, 4, and 5). Moreover, the effects were observed both when comparing near futures to distant futures and when comparing recent pasts to distant pasts.

It is important to note that in all these experiments, the accessibility and intensity of feelings were held constant across time perspectives. This suggests that while an important aspect of the present-orientation of the affective system is the myopia that results from the differential accessibility and intensity of feelings experienced in the present versus imagined in the future (Loewenstein 1996), this myopia induced by differential accessibility of feelings is not the only way in which the affective system is inherently present oriented. Not only are feelings more intense and accessible in the present than in the future (or past), but they are also weighted more heavily in the present than in the future (or past). Taking into account these findings and other recent findings documenting a close association between affective feelings and present orientation, this suggests that the association between time (or more generally, psychological distance) and affective feelings may be overgeneralized: a present orientation may skew judgments toward heavier weighting of affective information, and affective cues may skew judgments toward a present orientation. Again, both effects—whether a present orientation leading to greater weighting of feelings or intensely experienced affective feelings leading to present orientation—can be considered consequences of a greater engagement of the affective system in the present.

It is interesting to relate the current research to construal level theory. On one hand, one could argue that this research is consistent with construal level theory if one assumes that affective feelings tend to be more concrete and low level than cognitive beliefs and reasons

(Epstein and Pacini 1999; Metcalfe and Mischel 1999). On the other hand, one could also argue that our results are inconsistent with construal level theory if one assumes that affective values, such as the aesthetic of an apartment, speak to the desirability of the options, whereas cognitive values, such as the apartment's rent or distance to public transportation, speak to the feasibility of the options. Recall that in experiments 1, 1B, and 3, proximity to the present was found to increase the influence of the apartments' affective value (and decrease the influence of their cognitive value), whereas according to construal level theory, proximity should increase the weight of feasibility considerations and decrease the weight of desirability (Trope and Liberman 2000). Therefore, when do predictions based on the current research and those of construal level theory align? When do they diverge? One conjecture is that time perspective may influence representation of the decision problem along (at least) two dimensions: (a) an affective/cognitive dimension, as suggested by the present research, and (b) a desirability/feasibility dimension, as suggested by construal level theory. These two dimensions may be orthogonal and do not necessarily have a one-to-one correspondence. Depending on the choice situation, differences along one dimension may exert a relatively greater influence on consumer decisions across time orientations. The design of experiments 1 and 1B, for instance, involves affective and cognitive features that belong mostly to the same type of consideration (e.g., desirability). (The hypothetical scenario used in experiment 1 was designed to downplay participants' potential concern for rental price, which likely lies along the feasibility dimension. Participants were asked to imagine that they had found a well-paying job in the apartment rental scenario.) Size of the apartment is a relatively more cognitive feature, whereas view from the apartment is a relatively more affective feature, yet both are considered desirable attributes. In this situation, differences in affective-cognitive dimension should exert greater effect on consumer decisions.

There may be other choice situations that involve trade-offs between desirability and feasibility concerns while holding the type of valence (affective or cognitive) constant. In this situation, predictions based on construal level theory should prevail.

The current research offers novel predictions in certain decision contexts that cannot be explained solely by previous models such as construal level theory and explanations based on differential accessibility and intensity of feelings. For instance, it is not obvious how a different construal explanation would apply when participants were evaluating the same explicit external stimuli across time perspectives, as in experiments 1–3. In addition, construal level theory does not seem to account very well for recent neuroscientific findings suggesting an intimate connection between affect and the present (e.g., McClure et al. 2004). Our hypothesis suggests that one reason affect is closely associated with the present is that people give different weighting to affective and cognitive information across time orientations, and do so even under the *same* mental representation of the target object.

Our explanation based on differential weighting of affective feelings also makes unique predictions beyond Loewenstein's (1996) explanation based on differential accessibility–intensity of feelings. We suggest that consumers are more likely to rely on their feelings for imminent decisions than for temporally more distant decisions, even when they have the same phenomenal experiences about decisions across time; that is, self-control is difficult not only because people experience affective feelings more intensely for temporally imminent decisions than for temporally remote decisions but also because, holding the intensity of their feelings constant, people are more likely to rely on their feelings in decisions that are imminent. Moreover, the fact that similar effects occur when comparing judgments anchored on recent versus distant pasts (experiments 4 and 5) suggests that our findings cannot be easily accounted

for by standard conceptualizations based on time discounting and impatience, which are necessarily forward looking.

If the affective system is indeed more engaged in the present than it is in the future or past, other judgmental correlates of the engagement of affect should be more pronounced in the present than in the future or past. For example, a number of studies have documented that valuation judgments based on affect tend to be more insensitive to the quantitative scope or magnitude of the evaluated stimulus than valuation judgments based on cognitive computational processes (Dunn and Ashton-James 2008; Hsee and Rottenstreich 2004), a phenomenon known as the scope-insensitivity bias. In a companion paper (Chang and Pham 2009), we found that the scope-insensitivity bias that is typical of affective valuation is indeed more pronounced in the present than in either the future or the past. This finding is further evidence that affect is inherently a decision-making system of the present.

APPENDIX A

Imagine that you are about to graduate **next month** [**next year**], after years of hard work in college, and that you have accepted a well-paying job in the city. You have been looking forward to this day, which will be in May 2007 [May 2008], envisioning how life would be like after your college graduation. In just a month [year], you will be starting a new chapter in your life.

As your graduation is approaching **next month** [**next year**], you begin your apartment search process, looking for a one-bedroom apartment to rent after your graduation. You are considering the following two apartments that *will be available by the time you graduate* from college next month [next year]:

Apartment A

Characteristics of Apartment A:

- Partial courtyard view
- Single window in living room and small window in bedroom
- Spacious closet space
- 630 sq. ft.
- Steps from the subway
- Monthly rent: $1,600

Apartment B

Characteristics of Apartment B:

- Breathtaking view from most rooms
- Oversized windows with lots of sunlight
- Limited closet space
- 450 sq. ft.
- Four bus stops from the subway
- Monthly rent: $2,300

APPENDIX B

Recent Past

We are interested in consumer's evaluation of a team of video game designers based on a selection of games they have developed. You will see a number of mini-games (or casual games) this Japan-based team of game designers developed **recently**. Specifically, we will show you the mini-games they created, developed, and released **since 2007**. Please examine the screenshots and descriptions of these games carefully, and try to imagine yourself playing these mini-games. After looking at these mini-games from 2007-2008, you will be asked about your overall evaluation of this team of mini-game designers.

Game Title: PONG

Pong debuted in 2007. This is a simple paddle ball game that plays like table tennis or air hockey and is simple to learn. Its objective is to hit the ball across the playing field by moving the paddle up and down and try your best to hit the ball past your opponent's paddle on the other side to score. It can play up to two players.

Game Title: COMBAT

Combat was developed in 2007. Players pilot a tank around a field apparently constructed out of wooden building blocks, dropping mines and firing shells at the opponent tank. It can play in either the single-player or two-player mode.

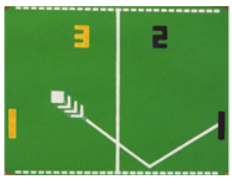
Game Title: DUCK HUNT

Duck hunt was developed in 2008. Using a zapper light gun for the game, players attempt to shoot down as many ducks or clay pigeons on mid-flight as they can. More than one duck or clay pigeon can appear at once.

Distant Past

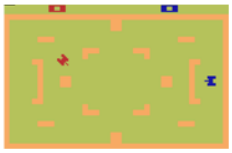
We are interested in consumer's evaluation of a team of video game designers based on a selection of games they have developed. You will see a number of mini-games (or casual games) this Japan-based team of game designers developed **in the past**. Specifically, we will show you the mini-games they created, developed, and released **in the early 1980s**. Please examine the screenshots and descriptions of these games carefully, and try to imagine yourself playing these mini-games. After looking at these mini-games from the early 1980s, you will be asked about your overall evaluation of this team of mini-game designers.

Game Title: PONG



Pong debuted in 1984. This is a simple paddle ball game that plays like table tennis or air hockey and is simple to learn. Its objective is to hit the ball across the playing field by moving the paddle up and down and try your best to hit the ball past your opponent's paddle on the other side to score. It can play up to two players.

Game Title: COMBAT



Combat was developed in 1980. Players pilot a tank around a field apparently constructed out of wooden building blocks, dropping mines and firing shells at the opponent tank. It can play in either the single-player or two-player mode.

Game Title: DUCK HUNT

Duck hunt was developed in 1985. Using a zapper light gun for the game, players attempt to shoot down as many ducks or clay pigeons on mid-flight as they can. More than one duck or clay pigeon can appear at once.

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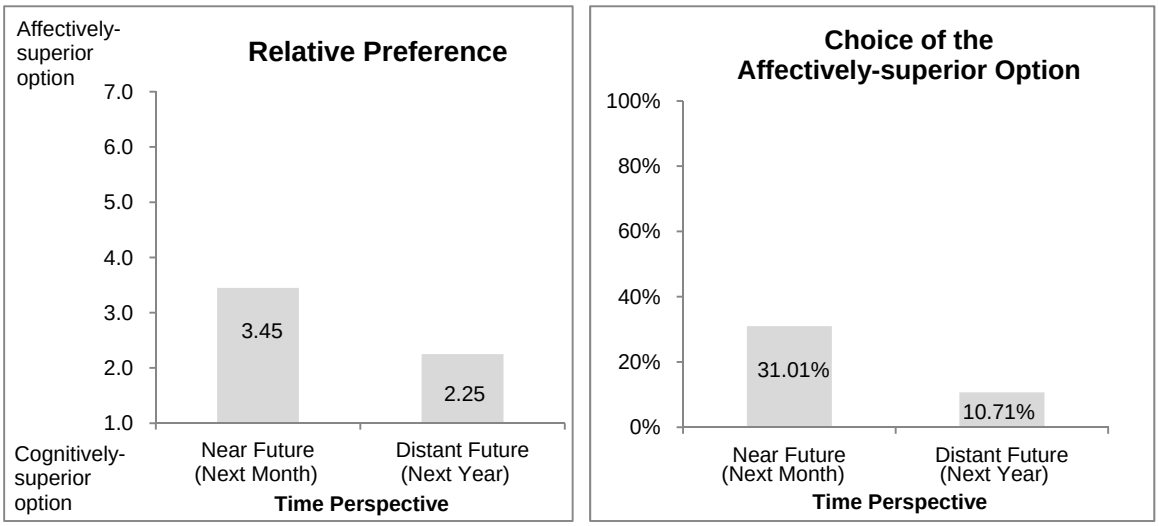
FIGURE 1

EFFECT OF TIME PERSPECTIVE ON RELATIVE PREFERENCE FOR AND CHOICE OF AFFECTIVELY SUPERIOR OPTION (EXPERIMENTS 1 AND 1B)

(A) EXPERIMENT 1 ($N = 61$)



(B) EXPERIMENT 1B ($N = 47$)

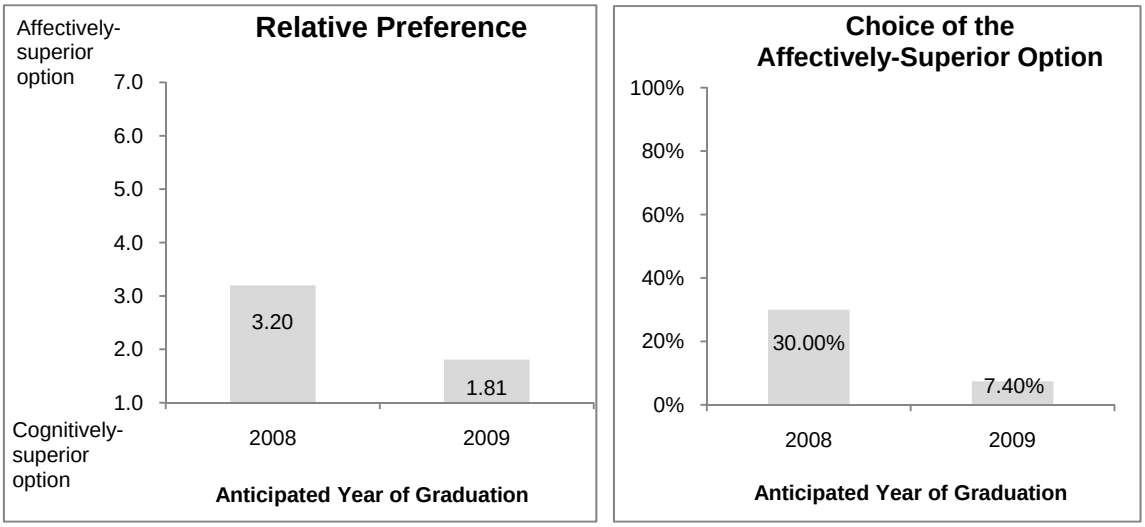
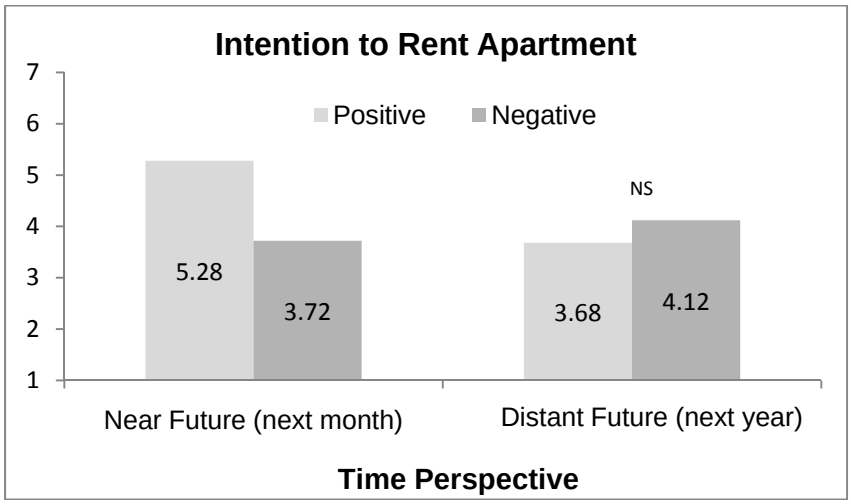


FIGURE 2

EFFECT OF TIME PERSPECTIVE AND MOOD ON INTENTION TO RENT AND WILLINGNESS TO PAY (EXPERIMENT 2; $N = 104$)



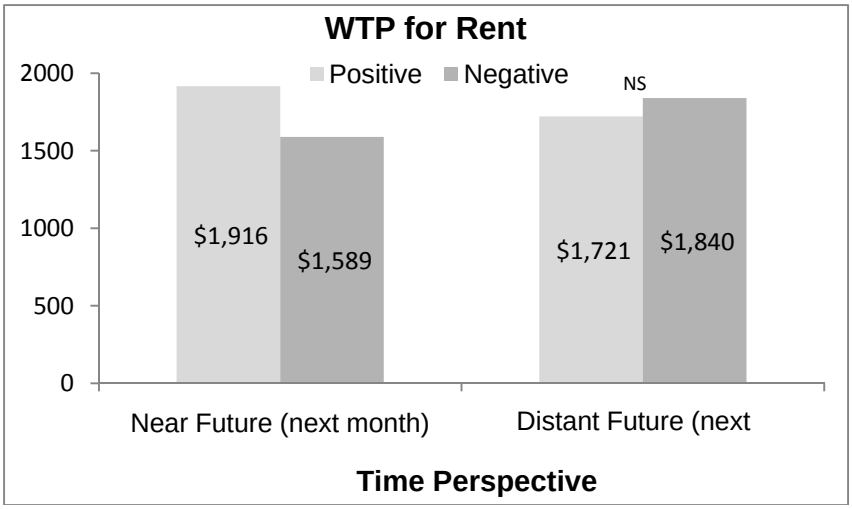


FIGURE 3

EFFECT OF TIME OF GRADUATION AND PROCESS INSTRUCTIONS ON RELATIVE PREFERENCE FOR AFFECTIVELY SUPERIOR OPTION (EXPERIMENT 3; $N = 64$)

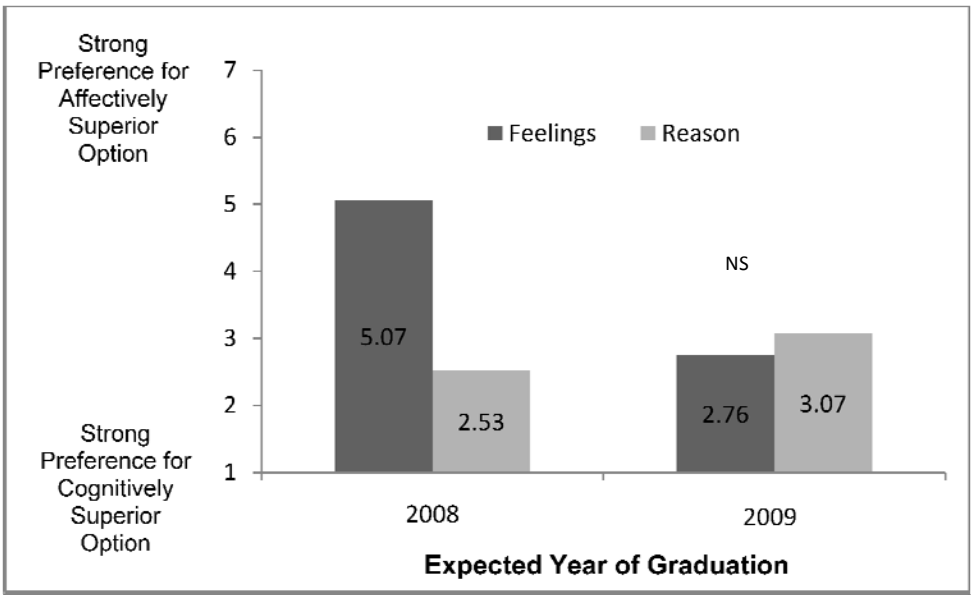


FIGURE 4

EFFECT OF TIME PERSPECTIVE AND MOOD ON VIDEO GAME EVALUATIONS

(EXPERIMENT 4; $N = 98$)

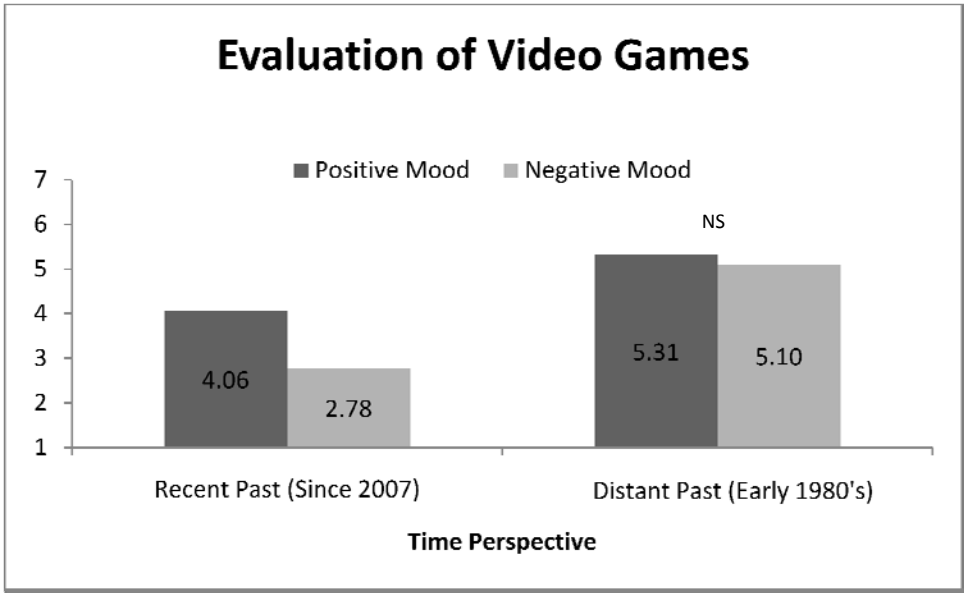


FIGURE 5

EFFECT OF TIME PERSPECTIVE AND MOOD ON EVALUATION OF SPRING BREAK

(EXPERIMENT 5; $N = 98$)