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**Happiness, Consumption and Hedonic Adaptation**

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**Happiness, Consumption and Hedonic Adaptation**

by

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## **Dedication**

This is dedicated to the ones I love. To my parents Geraldo and Adriana and my brothers Lucas and Mauricio, for a nurturing and loving environment, and especially to my wife Carla, for all the love, support, patience, understanding and selflessness a human being can ask for.

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## Preface

This dissertation is organized in two essays. The first essay tests the “experience recommendation,” which is the widespread idea that individuals would be happier by investing their money in experiential purchases, rather than in material purchases. It also tests moderators of the experience recommendation, namely valence of the outcome and individual levels of materialism.

The second essay explores the underlying mechanisms of the effects found in the first essay. It explores the role of hedonic adaptation on the effect of purchase type (material vs. experiential purchases) and outcome valence on consumer happiness. It also explores the role of memory as a possible cause for a difference in hedonic adaptation rates for experiential and material purchases. Finally, the second essay presents data on the difference between predicted and experienced hedonic adaptation for different purchase types.

Portions of the first essay (experiments three and four) and of the second essay (experiment one) will appear at the *Journal of Consumer Research*, in the August 2009 issue, under the title “Happiness for Sale: Do Experiential Purchases Make Consumers Happier than Material Purchases?,” co-authored by Julie R. Irwin and Joseph K. Goodman.

# **Happiness, Consumption and Hedonic Adaptation**

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Previous theories have suggested that consumers will be happier if they spend their money on experiences such as travel as opposed to material possessions such as automobiles. I test this experience recommendation and show that it may be misleading in its general form. Valence of the outcome significantly moderates differences in respondents' reported retrospective happiness with material versus experiential purchases. For purchases that turned out positively, experiential purchases lead to more happiness than do material purchases, as the experience recommendation suggests. However, for purchases that turned out negatively, experiences have no benefit over (and, for some types of consumers, induce significantly less happiness than) material possessions. I provide evidence that this purchase type by valence interaction is driven by the fact that consumers adapt more slowly to experiential purchases than to material purchases, leading to both

greater happiness and greater unhappiness for experiential purchases. Moreover, I show that this difference in hedonic adaptation rates for material and experiential purchases is being, at least partially, driven by a difference in memory for those types of purchases. I also show that individuals mispredict hedonic adaptation rates for material and experiential purchases. Finally, I discuss implications for consumer choice.



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# **FIRST ESSAY – HAPPINESS FOR SALE: DO EXPERIENTIAL OR MATERIAL PURCHASES LEAD TO GREATER CONSUMER HAPPINESS?**

## **Chapter 1.1: Introduction**

Psychologists (e.g., Gilbert 2006; Kahneman, Diener, and Schwarz 1999; Van Boven and Gilovich 2003), economists (e.g., Frank 1985; Veenhoven 1993) and public policy theorists (e.g., Easterlin 2003) have become increasingly interested in measuring and understanding human happiness. For psychologists, research on happiness has proved revolutionary because an overfocus on negative clinical states had omitted the positive range of human experience by focusing on what decreases pathology as opposed to what increases well-being (e.g., Aspinwall and Staudinger 2003; Seligman 2002). For economists, happiness provides a useful comprehensive construct with which to analyze human welfare because, “everybody wants to be happy. There is probably no other goal in life that commands such a high degree of consensus (Frey and Stutzer 2002, vii).” Consumer researchers have a stake in both of these general aims, as well. When considering the transformation of consumers through purchasing (Mick 2006) it makes sense to consider not only what leads to consumer downfall (debt, drug addiction, etc.) but also what leads to an especially happy life. As with economics, consumer research can become overly atomized, measuring the effects of particular consumption episodes without a sense of the larger picture of where these episodes lead in the long run.

The specific topics addressed across happiness research have covered a wide range, from precise neurological mapping (LeDoux and Armony 1999) to cross-cultural survey-based policy recommendations (Veenhoven 1993). Some of the most compelling recent work on happiness addresses the issue I address in this essay: the effect of particular human behaviors on subsequent happiness. This research has focused on issues such as religious activities and exercise (Mochon, Norton, and Ariely 2008), marriage and family experiences (Easterlin 2003), and gratitude (Lyubomirsky, Sheldon, and Schkade 2005).

However, there has not been much experimental exploration of an issue primary to consumer theory: how particular purchases affect happiness. As I detail later in the essay, this gap in the literature may be due to a surprising agreement among theorists on this issue. Perhaps the theory has proved so convincing that experimentalists saw no need to test it. Dating as early as Hume (1755/1737) and through Scitovsky (1976) and Frank (1985), the sentiment has been that individuals will be happier if they spend their money on experiences (e.g., theatre, concerts and vacations) as opposed to material purchases (e.g., fancy cars, bigger houses, gadgets). I term this the “experience recommendation.”

There is only one published empirical test of this experience recommendation. Van Boven and Gilovich (2003), using a number of clever experiments, found that their respondents did derive more happiness from positive experiential purchases when compared to positive material purchases. My essay is an expansion of this long-overdue experimental treatment of this issue.

In four experiments I affirm Van Boven and Gilovich's (2003) findings, but show that their results are limited to positive purchases. For negative purchases, experiences have no advantage over material goods, and sometimes material purchases even induce more happiness than do experiences, the opposite of the experience recommendation. I provide evidence that the experiences versus material goods distinction (as opposed to some other correlated variables) is underlying my results. For instance, a well-tested materialism scale moderates the findings in both my third and fourth experiments.

Moreover, I propose that individuals adapt slower to experiential purchases, when compared to material purchases. This differential in adaptation rates for experiential and material purchases is a possible underlying mechanism for my effects. Because individuals adapt more slowly to experiential purchases, adaptation leads to both lower (for negative purchases) and higher (for positive purchases) levels of retrospective happiness for experiential versus material purchases. I test this proposition in my second essay.

## Chapter 1.2: Theoretical Background

### WHAT IS HAPPINESS AND HOW DOES PURCHASING AFFECT IT?

I use the terms “happiness” and “subjective well-being” (Diener 1984) interchangeably. Other researchers (e.g., Frank 1999; Seligman 2002) have established that these terms are strongly interrelated and that ratings of happiness correlate highly with other measures of both psychological and physiological well-being (e.g., Sutton and Davidson 1997). Although measures of subjective well-being sometimes include other affective and cognitive components (e.g. satisfaction with life; Pavot and Diener 1993), happiness explains most of the variance in the subjective well-being construct (Compton et al. 1996).

Diener (1984) suggests that definitions of happiness can fall into one of three categories. First, happiness can be defined by an external criterion, such as virtue or holiness, often sought but seldom attained. Second, happiness can be the result of a comparison between different criteria for a good life (e.g., education, housing and health) and a person’s current situation. This definition is more commonly associated with satisfaction with life and it is often referred to as a cognitive component of happiness (Schimmack 2008). Third, happiness can be viewed as the preponderance of positive affect over negative affect. Lyubomirsky, King, and Diener (2005) also define happiness in a similar way, as a long-term propensity to frequently experience positive emotions. This last perspective is also consonant with



Layard's (2005) account of happiness being similar to "feeling good", enjoying life and wanting the feeling to be maintained. The contrary, unhappiness, is feeling bad and wishing things were different.

The definition of happiness employed in my research is aligned with Diener's (1984) third category. Specifically, I address happiness as a sense that life is good (Myers 1992), that life contains many positive situations and emotions (Ahuvia 2007; Lyubomirsky, King, and Diener 2005). This view of happiness has received the most attention in the literature and is consistent with interpretations of happiness used in previous research (e.g., Van Boven and Gilovich 2003; Gilbert 2006).

Happiness is measurable, predictable, and comparable across contexts (Diener 1984; Diener et al. 1999; Gilbert 2006; Layard 2005). Researchers typically measure happiness by asking people how happy they are (see Kahneman et al. 1999 for many examples) or how happy they are with a particular situation (Raghunathan and Irwin 2001) using multi-item scales.

On the relationship between consumption and happiness, Scitovsky (1976) suggested some years ago that purchasing may have a negative impact on happiness because consumers often buy "joyless" material possessions such as houses and cars, resulting in comfort but not pleasure. Likewise, Easterlin (2003) has proposed that investment in "pecuniary" market objects has no effect on happiness. In his essay "How Not to Buy Happiness" (2004) Robert Frank echoes these sentiments by recommending against the accumulation of "conspicuous goods" in the pursuit of happiness.

Most of the writers who discuss the negatives of material goods nevertheless do suggest that some types of purchases may increase happiness. Scitovsky (1976) argues for cultural experiences such as vacations and concerts to provide pleasure. Thought exercises based on adaptation studies argue that consumers might be happier trading their material wealth (e.g., a percentage of the square footage of their house) for a more pleasant day-to-day lifestyle (e.g., a more pleasant commute) and more enjoyable experiences throughout the year (e.g., more vacation time; Frank 1999). In his book, Jonathan Haidt (2006, 101) suggests that people should, “accumulate less, and ‘consume’ more ... vacations, and other enjoyable activities.” In other words, there is a suggestion that purchases of material goods (e.g., cars, houses, furniture) should, overall, lead to less happiness compared to purchases of experiential goods (e.g., vacations, concerts, sporting events). I call this suggestion the experience recommendation. Besides appearing in the writings outlined above, this recommendation has been established empirically (Van Boven and Gilovich 2003) and can be traced back to Hume (1775/1737, 283) who extols experiences (e.g., theatre) as superior to “the acquisition of worthless toys and gewgaws.”

What distinguishes material from experiential purchases? Material purchases are tangible; they may be taken from place to place, they last beyond a couple of days, and they take up physical space. Stereos, cars, and houses are examples of material goods. Experiential purchases are not tangible. Rather, the purchase entitles the consumer to an event that is finite in time. Movies, amusement parks, and restaurant dinners are examples of experiential purchases.

The material/experiential distinction is a continuum. For some purchases, for some consumers, locating particular purchases on the continuum may be difficult. However, the findings of Van Boven and Gilovich (2003) and the intuitions of many others (e.g., Easterlin 1995; Pine and Gilmore 1999; Scitovsky 1976) suggest that this distinction exists, and that consumers can easily discriminate between the two types of purchases. Future research will likely uncover additional subtleties relevant to these two categories of purchases (e.g., performance characteristics, Deighton 1992, vividness, degree of social interaction, memory distortions) but for now I concentrate on this basic distinction and terminology. Doing so allows me to speak to the experience recommendation, and to link my work with previous work in the area.

#### **HAPPINESS, CONSUMPTION, AND THE HEDONIC TREADMILL**

In addition to documenting and testing the experience recommendation, I propose an underlying mechanism for my findings. I suspect that purchase type affects the “hedonic treadmill” (Brickman and Campbell 1971; Raghunathan and Irwin 2001), the adaptation mechanism that integrates positive purchases into the decision makers’ reference point, shifting the purchase into the status quo instead of a gain (Kahneman, Knetsch, and Thaler 1991; Samuelson and Zeckhauser 1988). Experiences might be less susceptible to this treadmill; people continue to enjoy past pleasant experiences via memories (Frederick and Loewenstein 1999; Van Boven and Gilovich 2003) and experiences may have more of a lasting impact on one’s life

(Frank 2004; Scitovsky 1976). I explore this possibility in depth in my second essay.

I respectfully suggest that the experience recommendation may be premature, or at least too broad in scope. Although I agree that positive experiential purchases may lead to more lasting happiness than positive material purchases, I suspect that the benefit experiences enjoy over material possessions is isolated to positive purchase outcomes. The hedonic treadmill can work in reverse as well, leading to more positive adaptation for negative material purchases and less positive adaptation for negative experiential purchases. In other words, for negative outcomes, I suspect that consumers' experiences will lead to less happiness than their material purchases. Just as positive experiences remain with consumers, in memory and in lasting impressions on their lives, unfortunately, negative experiences remain with the consumer as well. As Frederick and Loewenstein (1999) imply in their review of adaptation levels for different events, adaptation to negative events (such as the death of a loved one) may require concrete evidence of the negative outcome and the resulting emotional acknowledgement of it (as they say, "taking a hit"). This concrete evidence is more relevant to material possessions than to experiences; it may be easier to move beyond negative material goods than it is to move beyond negative experiences.

As a thought exercise, imagine taking a vacation that turned out badly. Now remember an unfortunate material purchase at the same cost level (say, a piece of furniture). For many of us, the vacation may linger in memory at least as negatively as the piece of furniture. The particular relationship between purchase type and

happiness will depend on a number of factors, including the personality of the consumer. Thus, I propose that the effect of purchase type (experience vs. material) and outcome valence (positive vs. negative) on happiness depends on individual characteristics of the consumer such as materialism.

In this essay I experimentally address two basic components of the experience recommendation: (1) whether and when it is appropriate, and (2) whether the appropriateness of the recommendation depends on consumer characteristics such as materialism. I present these results not as the last word on this issue but as a launching point for future research streams on the topic.

In my first two experiments, I find that the advantage of experiences over material purchases holds only for positive purchases; if the purchase outcome is negative, I find that this relationship significantly changes, and experiential purchases have no advantage over material purchases on retrospective happiness. Averaged over good and bad experiences, I find no main effect of material versus experiential purchases on reported happiness. My third and fourth experiments explore whether this interaction depends on individual difference measures and whether my effects hold when I allow consumers to freely recall negative versus positive purchases (without being primed for a purchase type).

## Chapter 1.3: Experiment One

In experiment one I tested whether material and experiential purchases are differentially affected by a purchase's outcome valence. I asked respondents to recall a positive or negative purchase that was either material or experiential in nature. After the recall stage, respondents indicated their happiness with the purchase and answered control questions.

### METHOD

A total of 246 undergraduates participated in the study in exchange for extra credit. I asked respondents to recall a personal purchase. In the 2 X 2 between subjects design, I manipulated purchase type (experiential vs. material) and outcome valence (negative vs. positive). For the material object purchases, I asked respondents to:

Please describe a time when you spent about \$50 on an object. You kept the object for some time and may even still have it. It was an object you could hold in your hand. You bought the object to increase your happiness.

For the experiential purchases, I asked them to:

Please describe a time when you spent about \$50 on an experience. In other words you did not end up with anything tangible (anything you could hold in your hand) at the end of the experience except for your memories. You bought the experience to increase your happiness.

I adapted these instructions (and my happiness scales) from Van Boven and

Gilovich's (2003) instructions, but wrote them with more neutral diction to accommodate the positive and negative conditions. The outcome valence was manipulated in the last sentence of the instructions to be either positive ("And, it turned out well and you did enjoy the purchase") or negative ("Unfortunately, it did not turn out well and you did not enjoy the purchase").

Next, respondents rated their purchase on three seven-point happiness scales ( $\alpha = .95$ ): "When you think about this purchase, how happy does it make you?" (Not Happy-Moderately Happy-Very Happy), "How much does this purchase contribute to your happiness in life?" (Not at All-Moderately-Very Much), "To what extent do you think the money spent on this purchase would have been better spent on something else—some other type of purchase that would have made you happier?" (Not at all-Moderately-Very Much). In addition, I asked respondents how many months ago they made the purchase and how much they spent on the purchase.

## RESULTS AND DISCUSSION

Overall, I did not find a reliable relationship between the material versus experiential variable and reported happiness with the purchases,  $F(1,221) = 2.38$ , NS. However, as shown in Figure 1.1, the effect of purchase type was moderated by the outcome valence of the purchase,  $F(1,221) = 4.48$ ,  $p < 0.05$ . When I fit the "Happiness = Purchase Type" model at each level of purchase outcome valence (Irwin and McClelland 2001), I replicated the expected result for positive purchases: Experiential purchases induced more reported happiness,  $M = 5.57$ , than did

material purchases,  $M = 5.00$ ,  $F(1,221) = 4.24$ ,  $p < 0.05$ . If the purchase did not turn out positively, however, the effect did not hold. Fitting the model for the negative purchases, there was not a significant difference in happiness between experiential,  $M = 2.28$ , and material purchases,  $M = 2.37$ ,  $F(1,221) = .40$ , NS. Even if this null effect reflected a power issue, this possibility works against the main effect; if the effect was there, it would be in the opposite direction from the effect for positive purchases. The important conclusion from these results is that positive outcomes result in a different pattern of results than do negative outcomes. Controlling for the purchase amount and the time since the purchase did not change the interaction results ( $F(1,219) = 3.12$  when controlling for amount and  $F(1,220) = 4.28$  when controlling for time<sup>1</sup>), indicating that the results cannot be explained by differences in market value of the purchase types, or differences in recall of the subjective happiness afforded by the two types of purchases over time.

The results of my first experiment are aligned with findings from previous research (e.g., Van Boven and Gilovich 2003), where positive experiential purchases lead to significantly more happiness than positive material purchases. However, this effect does not hold for material and experiential purchases that turned out negatively. When the purchase had a negative outcome, the pattern changed significantly and experiential purchases no longer had an advantage over material purchases.

In this first experiment, and throughout much of these two essays, I will

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1 A Sobel (1982) test showed that amount paid and time since purchase did not reliably mediate the results,  $t$ 's  $< 1.65$ ,  $p$ 's  $> .10$ .



make the argument that the experiential/material purchase distinction, albeit theoretically limited, is representative of what the previous literature and, more important, consumers call experiences and material goods. In fact, a separate study ( $n = 90$ ) evaluated the three most common answers from each of the four conditions in experiment one in terms of how experiential or how material each purchase was. I found that the material/experiential distinction was clear to respondents, as expected. Material purchases were rated 2.06 on average, and experiential purchases 5.84 (on a 1 – 7 scale, where 1 = completely material, 4 = both, 7 = completely experiential) ,  $F(1,87) = 571.25$ ,  $p < 0.01$ . The magnitude of this effect was high (r-squared = .87).

## Chapter 1.4: Experiment Two

One possible explanation for experiment one's results is that when an experiential purchase turns out badly, it leaves the individual with nothing but bad memories. When a material purchase has a negative outcome, however, it leaves the individual with something in her hands that can be later sold, traded, or given away. Thus, perhaps the negativity of material purchases is dampened by the possibility of monetary or other gain from their disposal.

In order to rule out this possible explanation, I include a special caveat in experiment two on the disposal of negative material purchases. Specifically, respondents in the negative material condition received an additional piece of information stating that the object could not be sold or given away to somebody else.

### METHOD

I asked 273 undergraduates to participate in the study in exchange for extra credit. They were asked to recall a personal purchase. In the 2 X 2 between subjects design I manipulated purchase type (experiential vs. material) and outcome valence (negative vs. positive). Procedure and design were the same as in experiment one except the respondents in the negative material condition received extra instructions to ensure the purchase had no additional residual value. Specifically, I added "The object was defective or unsatisfying in some way, and you could not sell it or give it to somebody" at the end of the instructions.

Next, respondents rated their purchase on the same scales used in experiment one. I also asked them how many months ago they made the purchase and how much they spent on the purchase.

## RESULTS AND DISCUSSION

Experiment two replicated the first experiment: The effect of purchase type was moderated by the purchase outcome valence,  $F(1,242) = 3.85$ ,  $p = 0.05$ . By fitting the model at each level of purchase outcome valence, I find that, for positive outcomes, experiential purchases induced more reported happiness,  $M = 5.42$ , than did material purchases,  $M = 4.92$ ,  $F(1,242) = 9.06$ ,  $p < 0.01$ . However, this effect did not hold for negative outcomes. The difference between happiness induced by negative experiential purchases,  $M = 2.23$ , and happiness induced by negative material purchases,  $M = 2.20$ , was not significant,  $F(1,242) = .03$ , NS. Once again, controlling for the purchase amount and the time since the purchase did not change the interaction results ( $F(1,239) = 3.49$  when controlling for amount and  $F(1,239) = 3.85$  when controlling for time<sup>2</sup>).

These results show that the outcome valence by purchase type interaction exists above and beyond any residual value held by the material purchase. Both of my experiments have shown the same interaction, which presupposes that the material/experiential distinction is valid.

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<sup>2</sup> Again, a Sobel (1982) test showed that amount paid and time since purchase did not reliably mediate the results,  $t$ 's  $< 1$ ,  $p > .4$

## Chapter 1.5: Experiment Three

Experiments one and two treat my respondents as one group. However, as marketers, we must wonder what heterogeneity underlies these general results: are there segments of consumers who might glean different amounts of happiness from purchase types in my two valence conditions? Materialism seems like an obvious candidate for moderating my findings.

Materialism is attachment to material possessions, including an enmeshed relationship between the ownership of objects and one's sense of self (Richins and Dawson 1992, 308). Although researchers have addressed the societal and personal impact of materialism (many of them arguing that it has a negative influence, e.g., Burroughs and Rindfleisch 2002; Kasser 2002), for my purposes the measure of materialism allows me to isolate consumers for whom material purchases are especially important versus especially unimportant. I expect consumers not high in materialism to show especially strong valence by purchase type interactions. As materialism increases, so does the relative importance of material purchases. With that in mind, for materialistic individuals, positive (negative) material purchases might have an impact similar to the one of positive (negative) experiential purchases. Thus, I expect a three-way interaction between materialism, valence, and purchase type, such that the valence by purchase type interaction grows stronger as materialism decreases.

## METHOD

I asked 211 undergraduate students to participate in this experiment in exchange for extra credit. The procedure was similar to that used in the first experiment. I asked each respondent to remember a purchase. In the 2 X 2 between subjects design I manipulated purchase type (experiential vs. material) and outcome valence (positive vs. negative). The instructions were the same as those used in experiment one; however, instead of a \$50 purchase, participants were asked to recall a \$300 purchase. The rationale behind this increase was that more expensive purchases would carry greater implications for the individuals' happiness, and the increased variance in the responses would allow me to better detect individual differences.

Each respondent was assigned a computer station and received initial instructions. After they described and elaborated on the purchase, they were asked to rate their purchase on the same three scales used in the previous experiments, which were transformed on an overall "happiness with the purchase" measure ( $\alpha = 0.86$ ). Students also answered the 9-item version of "The Material Values Scale" (Richins 2004). The scale includes statements such as "I admire people who own expensive homes, cars, and clothes" and "I like a lot of luxury in my life" and asks respondents to rate these statements on a seven-point disagree-agree scale. I combined the ratings into one materialism measure ( $\alpha = .84$ ).

## RESULTS AND DISCUSSION

Twenty-one participants failed to follow the instructions, reporting negative (positive) purchases when asked to recall positive (negative) purchases, and I dropped them from the subsequent analysis. Confirming the results from my previous experiments, I found a significant interaction between purchase type and outcome valence,  $F(1,185) = 3.85$ ,  $p = 0.05$ . Fitting the “Happiness = Purchase Type” model showed that experiential purchases induced more happiness,  $M = 5.75$ , than material ones,  $M = 5.27$ ,  $F(1,185) = 5.53$ ,  $p < 0.05$ , if they turned out positively. This effect did not hold if the purchase turned out negatively,  $F(1,185) < 1$ , NS.

Materialism significantly influenced the valence by purchase type interaction: There was a materialism by valence by purchase type three-way interaction,  $F(1,181) = 6.06$ ,  $p < .05$ . To interpret the interaction, I fit the valence by purchase type effects at two levels of materialism, low (one standard deviation below the mean) and high (one standard deviation above the mean), using the method described in Irwin and McClelland (2001).

I address the consumers low on materialism first. These results were a particularly strong version of my previous results. Again, there was no overall effect of purchase type on happiness for low materialism consumers,  $F(1,181) < 1$ , NS, and, as figure 1.2 shows, there was a significant two-way interaction,  $F(1,181) = 9.81$ ,  $p < .001$ . Fitting the model both at low materialism and at each level of valence, I found that experiential purchases did lead to more happiness if there was a positive outcome,  $F(1,181) = 6.81$ ,  $p < .001$ , but that material purchases led to marginally more happiness if there was a negative outcome,  $F(1,181) = 3.03$ ,  $p < .08$ . In other

words, for low materialism consumers, switching valence resulted in a switch in happiness due to purchase type.

For high materialism consumers (figure 1.3), purchase type also did not influence happiness overall,  $F(1,181) < 1$ , NS. There was a main effect of outcome valence,  $F(1,181) = 68.46$ ,  $p < .001$ , but no two-way interaction,  $F(1,181) < 1$ , NS. High materialism consumers showed neither a benefit of experiences over material purchases (or vice versa) nor the interaction I found in previous studies. Comparing the high materialism respondents to the low materialism respondents, it is clear why there is a main effect, but no interaction. For negative outcomes, the high materialism respondents are just as unhappy with material as with experiential purchases (because they have high hopes for material purchases that are dashed). For positive outcomes, high materialism consumers do not get the extra “high” from positive experiences that other consumers get, because they are just as happy with the positive material possessions.

The results in experiment three replicate the results from my previous experiments on the experience recommendation and identify materialism as an additional limitation to outcome valence. One possible explanation to such effect is that experiential purchases are more open to positive reinterpretation. The next experiment further develops this possibility and rules out such an explanation. It also seeks to replicate the moderator of materialism using a different purchase elicitation method.

## Chapter 1.6: Experiment Four

In experiment one, I gave participants specific instructions to recall either a material or an experiential purchase. This design assumes that both material and experiential purchases are equally accessible to memory and that they are equally associated with negative and positive outcomes. Experiment four instead measures associations between purchase type and outcome valence that occur naturally in consumers' memories, without any prompting for one kind of purchase or another. I asked individuals to freely recall three different purchases and then to rate each one on a material–experiential continuum. Thus, this method is more reflective of the likely continuous nature of the experiential/material construct.

This experiment also rules out the possibility that chronic happiness underlies my results by measuring Satisfaction with Life (Pavot and Diener 1993) before the primary task, with a 10-minute filler task in between. These SWL scores did not have any main effects or interactions with the happiness measure, and will not be discussed further.

### METHOD

I randomly assigned 198 undergraduate and MBA students from The University of Texas at Austin to either the positive or negative purchase conditions. Participants recalled three purchases that turned out either well (positive condition) or poorly (negative condition) and then briefly described the purchases. Afterwards,



they were given the same definitions of purchase type used in my first experiment and were asked to rate each of these purchases on a seven-point scale, anchored by “completely material” and “completely experiential.” Following the ratings questions, participants received the same three happiness questions and the MVS (Richins 2004) used in the previous experiment.

## RESULTS AND DISCUSSION

All participants reported three purchases, rated them on the experiential or material purchases continuum, and then rated the purchases on the happiness scales. Thus, I employed a two-step hierarchical analysis. In the first step, I regressed each of the three happiness scores onto the three purchase classification ratings, for each participant. This model provided me with slopes (1 per participant) describing the influence of purchase type (material vs. experiential) on individual levels of happiness with the purchase. In the second step, I regressed these happiness by purchase-type slopes onto the valence of the outcome condition, as well as the materialism scale and their interaction. This final model captures the effect of materialism, valence, and their interaction, on the relationship between purchase type and happiness. In other words, does the influence of purchase type on happiness depend on valence? And does this dependency differ by materialism? Figure 1.4 plots these results. The y-axis represents the influence of purchase type on happiness, where the more positive the number, the greater the influence of experiential purchases on happiness. Conversely, the more negative the number on

the y-axis, the greater the influence of material purchases on happiness.

Memory for material versus experiential purchases did not differ by valence: Respondents did not recall experiences, or material purchases, more in the positive versus negative conditions  $F(1,192) = 1$ , NS. Replicating the results in my previous experiments, the “overall” line shows that the relationship between happiness with the purchase and purchase type was significantly predicted by purchase valence,  $F(1,192) = 6.22$ ,  $p < .05$ . For positive purchases, happiness was positively related to how experiential the purchase was,  $M_{\text{slope}} = .104$ ,  $F(1,192) = 12.69$ ,  $p < .001$ . For negative purchases, there was no relationship between happiness and purchase type,  $M_{\text{slope}} = .0001$ ,  $F(1,192) < 1$ , NS.

As in experiment three, there was a marginally significant interaction between outcome valence and materialism,  $F(1,192) = 3.57$ ,  $p = .06$ . At a low level of materialism (one standard deviation below the mean) experiences led to more happiness than did purchases of material possessions, but only if the outcome turned out positively,  $F(1,192) = 9.53$ ,  $p < 0.05$ . However, for individuals with high levels of materialism (one standard deviation above the mean), experiential and material purchases did not differentially affect happiness, regardless of the valence of the outcome of the purchase,  $F(1,192) = .18$ , NS.

Note that the results from this experiment are especially conservative: I allowed respondents to freely recall any purchases that came to mind. This design allows me to make stronger claims about the experience recommendation, because it mimics the consumer’s process when remembering a positive (or negative) purchase,

without any constraint as to the type of purchase.

## Chapter 1.7: General Discussion

These experiments addressed the validity of recommending experiential purchases to our consumers as a way to increase happiness. My results, and intuition, affirm that experiential purchases probably have more variance than material purchases: when they are good, they are very good; but when they are bad, they are awful. A new sofa may be disappointing, but it arguably is nowhere near as disappointing as finding oneself on top of a freezing cold mountain overnight on an adventure vacation. If the adventure vacation had brought only the sunny days and sweeping vistas promised in the travel brochure, then the experience could have been transcendent, but every experience purchase has a potential downside that probably should play a role in consumer decision making. Knowledge of the possible negatives of an experiential purchase may lead some consumers to choose the sofa over the vacation now and again, and I am not prepared to recommend otherwise, especially for consumers who are not materialistic and thus not horribly disappointed when material purchases do not bring the happiness they had hoped they would.

My results replicate Van Boven and Gilovich (2003), showing that, for positive purchases, experiences lead to greater happiness than material purchases. Also, there is a sense in which my results support the experience recommendation because I show that, on average, the most happiness obtained through purchasing is likely to be obtained through experiential purchases that turn out well. However,

the experience recommendation in its pure form is incomplete. My findings suggest that a lifetime of negative experiential purchases might lead to quite an unhappy life, and furthermore that negative material purchases may not leave as much of a negative mark.

We live in a materialistic society (Kasser 2002), so it is not surprising that individuals often look to material purchases to provide happiness. I, like many researchers (e.g., Easterlin 2003; Burroughs and Rindfleisch 2002; Frank 1985; Scitovsky 1976), would not expect material goods to lead to happiness. Nevertheless, my results suggest that material purchases can increase happiness, both for materialistic and nonmaterialistic consumers. Perhaps the hedonic treadmill (Brickman and Campbell 1971; Raghunathan and Irwin 2001) is a bit more complicated than previous research had supposed. My results affirm that experiences may be less susceptible to adaptation compared to material purchases (see Frederick and Loewenstein 1999 for an exploration of adaptation rates across purchases), but caution that this adaptation difference applies both to negative and to positive purchases. My second essay will test such possible explanation by investigating whether hedonic adaptation rates vary by purchase type and outcome valence.

Future explorations could directly contrast the more atomic judgments of purchases (e.g., ratings of effectiveness, satisfaction with the purchase, intent to repurchase within the brand, quality) that are common in marketing research with the global happiness judgments I measure. One interesting component of this

comparison is the potential inconsistency between what people believe they want and what actually makes them happy. As Gilbert writes in his book *Stumbling on Happiness*, humans spend a lot of time trying to behave in ways that will make their future selves happy (Gilbert 2006). Why do we guess wrong so often? Applied to the marketplace, perhaps initial judgments and affective responses to products are not particularly predictive of how these products might contribute to happiness in the long run. I also address the issue of whether individuals are accurate when predicting hedonic adaptation rates for material and experiential purchases in the second essay.

Unlike much of the work on materialism, I did not focus on the main effect of materialism on happiness. There remain unanswered questions about the relationship between materialism and the experience recommendation. For example, perhaps consumption follows material/experiential patterns as well, and it is possible to consume material goods more or less experientially and vice-versa (Holt 1995). In a broader sense, future research might also address the relationship between purchase habits and overall happiness.

Future research might also uncover a finer distinction between material and experiential purchases. In this essay, I chose to be able to communicate with previous research (Van Boven and Gilovich 2003) and theory (Frank 1999; Scitovsky 1976) using a definition that is closely related to what consumers consider material or experiential purchases.

## **SECOND ESSAY – THE ROLE OF HEDONIC ADAPTATION, ITS PREDICTION AND ANTECEDENTS ON THE INFLUENCE OF TYPE OF PURCHASE ON HAPPINESS.**

### **Chapter 2.1: Introduction**

In my previous essay, I have shown that the effect of type of purchase (material vs. experiential) on happiness is moderated by the valence of the purchase outcome. For positive purchases, experiential purchases lead to greater happiness. However, for negative purchases, experiences have no advantage over material purchases.

This interaction is further moderated by an individual's level of materialism. Individuals high in materialism do not show any of the previously reported effects, aside from the main effect of valence outcome. Individuals low in materialism, however, exhibit a particularly stronger version of the type of purchase by valence outcome interaction.

I have argued that the previously found interaction is likely to be explained by a difference in hedonic adaptation rates for material and experiential purchases. Briefly, I propose that individuals adapt more slowly to experiential purchases, as compared to material purchases. After the same given period of time, individuals would be happier with an experiential purchase, when compared to a material purchase of the same initial happiness level. At the same rate, individuals would be more unhappy with a negative experiential purchase over the same period of time,

when compared to a material purchase. Figure 2.1 illustrates such scenario. Frank (2004) and Van Boven and Gilovich (2003) had already speculated about the possible effect of hedonic adaptation on the influence of type of purchase on consumer happiness. Frank (2004), for example, argues that experiences might have a longer lasting effect on happiness. Van Boven and Gilovich (2003) raised the possibility that experiential purchases might be less susceptible to the hedonic treadmill.

In this second essay, I present evidence supporting the hypothesis that individuals adapt more slowly to experiential purchases, than to material purchases. I also show that the differential effect of hedonic adaptation on type of purchase is, at least partially, driven by how individuals recall experiential and material purchases. I argue that material purchases, due to their tangible nature, give consumers an accurate representation of what the purchase was. When a consumer holds a previously purchased coffee mug, there is little ambiguity about the mug's size, color, shape, weight, etc. Experiential purchases, however, reside in memory and their representation is only as accurate as the consumer's recollection. As I argue in more detail later in this essay, the presence of a constant memory cue, in form of the object itself, makes the recollection of material purchases more accurate. As a consequence, adaptation to material purchases happen faster, when compared to experiential purchases.

Finally, I present evidence that individuals are not aware of different hedonic adaptation rates for different purchase types. More specifically, I show that individuals predict opposite patterns of hedonic adaptation for positive experiential



and material purchases. They predict slower adaptation rates for positive material purchases and faster for positive experiential purchases.

This essay's set of results are not only important for the hedonic adaptation literature, a field where experimental work is scarce (Frederick and Loewenstein 1999), but also for consumer researchers attempting to understand the impact of different processes on hedonic adaptation and their ultimate consequences on choice. For example, beyond the already introduced effects to be investigated in this essay, little is known about the role of memory on hedonic adaptation (Frederick and Loewenstein 1999). Does recall make adaptation faster, as we re-experience the same stimulus? Or perhaps recall hinders adaptation, by resetting the reference point of the experience (Frederick and Loewenstein 1999).

Knowing whether individuals are accurate when predicting hedonic adaptation rates also has important theoretical and practical implications. We make choices taking into consideration how happy our future selves will be (Gilbert 2006). Following this rationale, it makes sense that, given the opportunity to choose between equally attractive purchases, consumers will choose the one with slower adaptation rates, or in other words, the purchase that will make them happier the longest. Normatively, the option with the slower adaptation rate (assuming equal levels of initial happiness) is the option that maximizes utility (i.e., happiness) for the consumer.

This essay is organized as follows. I will first review the literature on hedonic adaptation, its origins and moderators, especially the possible effects of memory on

hedonic adaptation. I then proceed with a brief review on anticipation to hedonic adaptation and then proceed with four experiments. Experiment one will test hedonic adaptation for different purchase types and will show that individuals adapt more slowly to experiential purchases, than to material purchases. Experiments two and three will investigate the hypothesis that a difference in how individuals remember material and experiential purchases is driving the results found in experiment one. Finally, experiment four will show that individuals are inaccurate when it comes to predicting hedonic adaptation rates for both material and experiential purchases. This essay closes with implications for theory and suggestions for future studies.

## Chapter 2.2: Theoretical Background

Hedonic adaptation (Frederick and Loewenstein 1999) refers to the lessening of a hedonic response over time. Better things become less good over time, and worse things become better. Hedonic adaptation follows phenomena described by the adaptation-level theory (Helson, 1964). Adaptation, in its most comprehensive sense, first came into psychology from biology, where it refers to a sense of “adjustment to the conditions under which species must live in order to survive, and from sensory physiology, where it is used in the much more restricted sense of decrement in intensity of sensation...” (Helson, 1964, 37) Adaptation explains, for example, why although blinded by the bright daylight after leaving a building we slowly get used to the new level of brightness and are eventually able to see normally.

Hedonic adaptation takes two related forms, one has been used to refer to the reduction of the effect of a constant repeated stimulus (e.g., traffic noise; Weinstein 1982 or incarceration; Wormith 1984), the other refers to the reduction in hedonic response to a stimulus that occurs once (e.g., buying a luxury good; Frank 1999).

Although at this juncture there is not much empirical evidence on the issue, there has been some suggestion in previous literature that hedonic adaptation rates may vary by type of stimuli. For instance, Van Boven (2005) surmises that people may tend to adapt faster to material purchases because (positive) experiential purchases remain open to positive reinterpretation (Mitchell et al. 1997). As a

consequence, memory keeps the experiences from declining in happiness over time. Likewise, in their review of adaptation rates, Fredrick and Loewenstein (1999) find that people show very little adaptation both to certain positive experiences such as plastic surgery and certain negative experiences such as loss of a loved one, whereas adaptation to material gains such as a particular increase in income is quite rapid.

In a chapter of his book *Luxury Fever* entitled “Gains that Endure,” Frank (1999, 88) suggests that luxury goods leave consumers dissatisfied because consumers adapt to luxury goods especially quickly. He considers whether some purchase types might provide slower adaptation than luxury goods, and suggests experiential purchases, such as vacations, saying that, “Provided they are of sufficient duration, vacations have been shown to have restorative effects that persist long after people return to work.” The one time purchase of a vacation may lead to slower adaptation over time, and thus more happiness, than spending a similar amount on a luxury object.

I agree with this supposition, and expand it to suggest that in general people adapt to experiences, on average, more slowly than to material purchases. Note that I apply this proposition both to negative and positive purchases: hedonic adaptation would result not only in a positive experience inducing more happiness, but also in a negative experience inducing less happiness than the comparable material purchase with the same initial happiness level. In my first experiment in this essay, I directly test hedonic adaptation rates over time, varying by purchase type and valence, and show hedonic adaptation underlies my primary finding in this essay. In other words,

I propose (and show) that hedonic adaptation, by reducing the unhappiness with negative purchases as well as the happiness with positive purchases at different rates across purchase types, results in concomitant differences in retrospective happiness. Furthermore, I show that this adaptation happens quite quickly, often in a matter of minutes.

One of the reasons individuals might adapt more slowly to experiences is that adaptation to experiential purchases often occurs solely in an individual's memory. For example, buying a t-shirt leaves us with the t-shirt in our possession, and subsequent judgments of the purchase do not have to rely on memory, once the object is still physically accessible. As soon as an experience, such as a dinner or movie is consumed, is gone, residing only in our memories. As a consequence, I wonder whether recall, namely the presence or absence of a memory cue, will accelerate or hinder the hedonic adaptation process.

#### **MEMORY AND HEDONIC ADAPTATION**

Frederick and Loewenstein (1999), in a discussion of potential moderators of hedonic adaptation, present mixed evidence for the role of memory on the adaptation process. On the one hand, in their discussion of the role of uncertainty on hedonic adaptation, they suggest that being unsure of the outcome of an event impedes adaptation to that event. Explicitly, they point out that for events with a potentially negative outcome “successful hedonic adaptation may require a person to 'take a hit' – to recognize, admit, and confront some loss” instead of remaining uncertain

(Frederick and Loewenstein 1999, 317) Applied to my context, this statement implies that memory cues should influence adaptation: Given that memory cues render an event more certain, memory cues should speed adaptation.

Results from Mitchell et al. (1997) point to the same rationale. The authors have found that, when recalling positive experiences, individuals tend to forget little misfortunes that accompanied that experience, focusing only on its positive aspects. As a consequence, memories for positive experiences tend to be more positive than the actual experience. Memory cues would remind individuals of both positive and negative aspects of their experiences and, hence, provide a more accurate (i.e. less uncertain) picture. In the absence of memory cues, however, experiences are construed based solely on its positive (or negative) central aspects. This distinction maps onto my main proposition. When exposed to memory cues, individuals have the opportunity to contemplate both negative and positive aspects of their experiences, incorporating negative elements to positive experiences and positive elements to negative experiences. This, in turn, will make adaptation to positive and negative experiences faster.

Finally, memory cues can encourage habituation by acting as repetition of an experience. Sequential exposure to a stimulus can help individuals to adapt to it faster. This process is based on habituation. Habituation happens at a very basic level, and refers to decrease in the response to repetitive stimuli (Kandel and Schwartz 1982). Along those lines, providing memory cues for their experiences give individuals another opportunity to re-visit that experience, increasing repetition and

the subsequent chance of habituation.

On the other hand, Frederick and Loewenstein (1999) suggest that event reminders might slow hedonic adaptation. For individuals who suffer from the loss of a dear family member, for example, the environment is often full of triggers that cue thoughts and memories of their loved one (Shuchter and Zisook 1993). It may feel as if every memory cue sends the individual's hedonic response back to the level where it was when the loss occurred.

Consonant with this view, Hsee and Tsai (2008) consider hedonic adaptation to be a psychophysical process that happens through dilution of attention. As attention is diverted from the stimulus, the stimulus invokes weaker and weaker responses. In my context, this theory supports the notion that, being reminded of either a positive or negative experience would impair hedonic adaptation, because the reminder would bring attentional focus back to the original stimulus.

Thus, there are two equally compelling possibilities for the influence of memory on hedonic adaptation. Both have implications for my previous findings on happiness with experiential versus material purchases, because material purchases naturally involve more possibilities for memory cues than do experiential purchases. Previous research does not conclusively establish the role of memory in hedonic adaptation. I will take the position that memory cues speed adaptation, for two reasons. First, my first experiment will show that consumers adapt more quickly to material purchases than to experiential purchases, and memory cues are an obvious difference between these two types of purchases. Second, although the arguments for

the moderation of adaptation due to memory cues are suggestive, I am more convinced by the argument that memory cues will speed the adaptation process, for the simple reason that memory cues give individuals an opportunity to re-experience their choice, increasing habituation, at the same time as they reduce uncertainty about their choice.

In my second and third experiments, I investigate the effects of memory cues on the process of hedonic adaptation to experiential purchases. I hypothesize that memory cues will make experiential purchases closer to material purchases when it comes to adaptation rates. In other words, I expect adaptation to happen faster when individuals are presented with memory cues, mapping onto one possible reason why individuals adapt faster to material purchases, when compared to experiential purchases.

### **PREDICTIONS OF HEDONIC ADAPTATION**

Just as important as understanding how individuals adapt to material and experiential purchases, and the role memory plays in driving such differences in hedonic adaptation rates, is to understand whether individuals expect different hedonic adaptation rates for experiential and material purchases, if at all. Predictions of hedonic adaptation rates are likely to inform future choices. Given the choice between two different purchases with equal predicted utility, consumers will choose the one that holds its value the longest. In other words, consumers will likely choose the option with the slower adaptation rates.



The now rich literature on affective forecasting shows repeatedly that people are poor predictors of how their future affective experiences will make them feel (e.g., Gilbert 2006, Kahneman and Snell 1992, Mitchell et al. 1997, Wilson et al. 2000). Individuals miscalculate the intensity of their feelings (Mitchell et al. 1997), how long it will take to get over those feelings (Gilbert 2006, Kahneman and Snell 1992) and how environmental factors will act to mitigate their affective states (Wilson et al. 2000).

However, little is known about how individuals predict hedonic adaptation to their affective experiences. In one of the few empirical accounts of such predictions, Kahneman and Snell (1992) showed that individuals expected successive tastings of plain yogurt to become increasingly unpleasant. In fact, after successive trials, individuals in their sample rated the yogurt as less unpleasant over time. In this essay's terms, individuals in Kahneman and Snell's (1992) studies failed to account for hedonic adaptation to the taste of plain yogurt.

More recent studies have also shown that individuals are inaccurate when predicting adaptation to pleasurable and aversive stimuli. Nelson and Meyvis (2008), for example, found that people expect aversive experiences to become more bearable as they are broken up. However, the authors found that adding interruptions to aversive experiences makes the overall experience even more negative. The same pattern is found for positive experiences. Nelson and Meyvis (2008) found that individuals prefer positive experiences to be undisturbed when, in fact, breaking up positive experiences increase their overall enjoyment.

Similarly, Riis et al. (2005) brought evidence that healthy people underestimate the self-reported well-being of individuals with serious illness. One of the reasons why healthy people show such inaccuracy is because they fail to account for hedonic adaptation. They fail to take into consideration the fact that unhealthy individuals adapt to their condition and are able to lead a happy life. Calling attention to the hedonic adaptation process makes for more accurate predictions of the quality of life (i.e., well-being) of others (Ubel, Loewenstein and Jepson 2005).

Finally, Wang, Novemsky and Dhar (forthcoming) showed that consumers fail to predict hedonic adaptation to products (material purchases). Interestingly, although consumers hold correct beliefs about hedonic adaptation, i.e. they expect enjoyment with products to fade away over time, they fail to incorporate this belief in the prediction of hedonic adaptation for a specific product. Wang, Novemsky and Dhar (forthcoming) have show that, only when attention is drawn to the time period over which a product is consumed, hedonic adaptation is considered and, therefore, influence choice. These results are consistent with the “focusing illusion,” (Schkade and Kahneman 1998) where individuals mispredict adaptation to negative events by failing to consider peripheral aspects of their life (e.g., inaccurately assuming that moving from cold Michigan to sunny California will drastically increase their happiness in life by ignoring that other factors, besides weather, also account for their overall happiness).

My essay extends this framework to different types of purchase. Not only I will focus on whether individuals predict hedonic adaptation rates, but also on

whether predicted adaptation rates are different from experienced adaptation for experiential and material purchases. Following Dolan and White's (2006) dynamic well-being framework, individuals anticipate and plan behaviors that will be conducive to their overall happiness. Accordingly, they choose options that will lead to greater happiness. Given that individuals are aware of adaptation (Wang, Novemsky and Dhar forthcoming), it is only natural to assume individuals will choose the longer-lasting, happiness maximizing option. Knowing whether people are accurate when estimating hedonic adaptation rates for different types of purchases can help illuminate their choice process.

## Chapter 2.3: Experiment 1

My previous essay has showed that the effect of purchase type on happiness depends on the outcome valence. However, I have not directly tested my proposed mechanism for this effect. Previously, I suggested that adaptation differences drive this interaction. People adapt more slowly to experiences than to material purchases and, as a consequence, happiness is mitigated less over time for experiences than for material purchases. In this first experiment, participants were given the chance to choose an actual product (material purchase) or experience (experiential purchase). I then measured their happiness with the purchase, using the same happiness measures that have been used throughout my studies. I collected the ratings (1) immediately following consumption of the chosen option, (2) seven minutes later, (3) one day later, (4) one week later, and (5) two weeks later.

### **METHOD**

Three hundred thirty five students from The University of Texas at Austin participated in this experiment in exchange for extra-credit in an introductory marketing course. Each participant was assigned (without their knowledge) to either a “material purchase” or an “experiential purchase” condition. In the experiential condition, the participants were told that they could use three “lab dollars” to purchase one experience from a set of three possible options (a video clip, a song, or a video game) to consume (i.e., watch the video, listen to the song, or play the video-

game) in the lab session. The three items presented to the respondents were chosen randomly from a pool of seven possible experiences (two video clips, two songs, and three video-games, and were each priced at \$3). After the choice task, participants watched the video, listened to the song, or played the video-game in the experiential purchase condition. Once the experience was over, participants answered the same 3-item happiness scale used in my previous studies. Then, participants took a 7-minute break. More specifically, the experimenter made the following announcement, “We are going to have a 7-minute break in this session. During this break, you can do anything you want. The lab door will remain open, so you can come and go at your will.” This break provided me with the first adaptation period.

After the 7-minute break, participants answered the same set of dependent measures used in the first part of the study (before the break). They saw the following instructions

We are going to ask you some final questions about your choice of a [their choice]. We know we asked these questions earlier. However, we are interested in your answers to them now (your answers may be different or they may be the same).

They were then debriefed with instructions to answer the follow-up questionnaires. The follow-up questionnaires were collected through the internet one day, one week, and two weeks after the in-lab experimental session. Each follow-up questionnaire consisted of a brief introduction reminding my participants of the in-lab study, without any reference to the options from which they had chosen. Following this introduction, participants responded, via e-mail, with (1) a very brief description of what they had chosen (to check that they remembered what they had

chosen, which all of them did) and (2) their answer to the same happiness scale question used in my lab sessions.

Individuals in the material purchase condition went through the same procedure used in the experiential purchase condition except that they chose to “purchase” one item from a group of three products (instead of three experiences), randomly sampled from a set of seven options (a set of pencils, a can holder, a keychain, a ruler, a deck of cards, a screwdriver, a small picture frame). The items all had retail prices close to \$3.00 (the amount the participants were “charged” in lab dollars for the purchase.) After the choice, participants in the material purchase condition received their product and were told they could take this product home with them.

## **RESULTS AND DISCUSSION**

I had 100% response rates for dependent measures collected immediately after choice and 7 minutes after choice (i.e., the adaptation rates collected in lab). Response rates were 83.3% for dependent measures collected the day after, 69.8% for the week after, and 61.1% for two weeks after choice. A hazard regression indicated that response rates were not influenced by my between-subject type of purchase manipulation ( $\chi^2(1) = 0.79$ , NS). In other words, purchase type did not affect response rates. In addition, there was variance in the choice of experiences and material goods; the choice probabilities for the seven experiences were .26, .22, .19, .13, .11, .09 and .05, and for the seven material goods were .30, .21, .20, .14, .

08, .07 and .03.

As in my previous studies, these data had two between subjects variables: purchase type (which was manipulated), and purchase valence (which was measured). In addition, I had a within-subject longitudinal variable, time since purchase. Consistent with many (if not most) longitudinal data of psychological responses (e.g., Drew and Abbott 2006), my data followed a power law function:

$$y = ax^k \tag{1}$$

Figures 2.2 and 2.3 depict happiness scores for material (2.2) and experiential (2.3) purchases over time (in minutes) by the initial happiness scores (which I term the “setpoints”). The setpoints are the continuous measure of the purchase valence (positive to negative). As the figures show, I obtained a classic power function shape, with most of the change happening in the first time periods. The average AIC (Akaike Information Criterion, for which lower values indicate better model fit) across setpoint was -21.08 for the power law model, -14.29 for a quadratic model, and -11.08 for a linear model.

The proper analysis for the data is a hierarchical mixed-design model that first captures the longitudinal effects and then tests for differences in these effects by the between subjects variables. The first step captured the power-function by using the standard  $\log(y)$ - $\log(x)$  model (the power function becomes linear when transformed in this way). Thus, for my model I regressed log-transformed happiness

scores onto the log-transformed time since choice. Time since choice was measured in minutes (one minute, seven, 1440 (one day), 10080 (one week), and 20160 (two weeks) minutes after the choice.)

This step calculates a slope for each respondent reflecting the effect of elapsed time on happiness with the choice (note that the slope from this model corresponds to the exponent in the power function).

$$\log(\text{happiness}) = \beta_0 + \beta_{1i} x_{\log(\text{time})} + \text{error} \quad (2)$$

The resulting individual slopes were then regressed onto type of purchase (experiential vs. material purchases), each individual's set point, and the interaction between both variables:

$$\beta_{1i} = \beta_0 + \beta_a x_{\text{type of purchase}} + \beta_b x_{\text{setpoint}} + \beta_c x_{\text{type of purchase} \times \text{setpoint}} + \text{error} \quad (3)$$

Thus, in this model I test for different adaptation rates for experiential and material purchases, as well as my purchase type by valence interaction.

This regression confirmed that the relationship between time since choice and happiness ( $\beta_{1i}$ ) is moderated by type of purchase and initial happiness with the choice,  $F(1,245) = 14.50$ ,  $p < .001$ . Figures 2.4 and 2.5 help explicate this interaction (using the methods described in Irwin and McClelland 2001). Figure 2.4 plots (log) happiness scores for choices made in the material purchase condition by (log) time since consumption. Each line corresponds to a model fit at different setpoints (1, 2, 6,



and 7, where 1 is the lowest happiness score and 7 the highest). Figure 2.5 presents the analogous data for experiential purchases.

As the figures show, the slopes are steeper in the material than in the experience conditions,  $F(1,245) = 4.83$ ,  $p < .05$ , showing that material purchases indeed show faster adaptation than experiential purchases. In fact, in this data I do not see much adaptation at all for particularly negative purchases. As Frederick and Loewenstein (1999) explain, some situations do not induce adaptation, and sometimes they induce sensitization (increased sensitivity over time). Perhaps some negative experiences are of this nature, although of course I hesitate to make too much of this possible sensitization apart from noting that it is evocative (and consistent with my expectation of lack of adaptation to experiences).

To underscore the effect these adaptation differences have on subsequent happiness, I tested the effects of purchase type and setpoint (i.e., valence of the outcome; in other words the interaction originally described in my previous studies) across the different points in time. When the model is fit (Irwin and McClelland 2001) at time two (seven minutes after the choice), there is not an interaction between type of purchase and valence of the outcome,  $F(1,245) < 1$ , NS. However, as time passes, this interaction appears,  $F(1,245) = 8.14$ ,  $F(1,245) = 9.58$ , and  $F(1,245) = 9.96$  (all  $p < .05$ ), for measures taken one day, one week, and two weeks after the lab session, respectively. This set of results not only replicates my retrospective happiness findings from previous studies, but also supports my contention that hedonic adaptation is driving the effects.

Note that the stimuli in this study were nested under the material and experiential categories. There are pros and cons to nested designs in this context. Although participants chose from among a wide variety of potential purchases and no particular purchase dominated choice within the two purchase types, as in all nested designs the material/experiential classification is confounded with the particular choices within the two categories. The benefit of a nested design, which probably explains its popularity in marketing research, is that the items naturally embody the categories (i.e., games actually are experiences; rulers actually are material goods.)

## **Chapter 2.4: Experiment 2**

The previous experiment has shown that individuals adapt more slowly to experiential purchases when compared to material purchases. I previously raised the possibility that this difference in hedonic adaptation rates is due to the presence of a physical representation of the purchase in the material purchase condition and hypothesized that giving individuals memory cues for experiential purchases would make them adapt faster to those purchases, when compared to experiential purchases where memory cues are absent.

In this experiment, my participants are given a choice of an experiential purchase and they consume this experience in the lab. Much like in the first experiment, my participants answer to a happiness scale one minute, seven minutes, a day, a week, and two weeks after the consumption of the experience. However, they are assigned to either a condition with or without memory cues before each measure of happiness.

### **METHOD**

Three hundred and sixteen students from The University of Texas at Austin participated in this experiment in exchange for extra-credit in an introductory marketing course. The procedure for this experiment followed that of the first experiment. However, participants were exposed only to experiential purchases. Each participant was assigned (without their knowledge) to either a “no memory

cue” (control) or a “memory cue” condition. In the no memory cue (control) condition, participants followed the exact same procedure employed in the experiential purchase condition of experiment one. They chose one experience out of three possible options (a video clip, a song, or a video game) to consume (i.e., watch the video, listen to the song, or play the video-game) in the lab session. The three items presented to the respondents were chosen randomly from a pool of six possible experiences (two video clips, two songs, and two video-games) and were each priced at \$3 (three “lab-dollars.”) After the choice task, participants watched the video, listened to the song, or played the video-game in the experiential purchase condition. Once the experience was over, participants answered the same 3-item happiness scale used in my previous studies. Then, participants took a 7-minute break after which, they answered the same set of dependent measures used in the first part of the study (before the break). They were then debriefed with instructions to answer the follow-up questionnaires. The follow-up questionnaires were collected through the internet one day, one week, and two weeks after the in-lab experimental session. The follow-up questionnaires for the no memory cue (control) condition contained the same set of dependent measures collected this far and were the same as those used in the experiential purchase condition of experiment one.

Individuals in the memory cue condition followed the exact same procedure as those in the no memory cue condition, with one difference. After the first exposure to their choice and first measure of happiness, every subsequent happiness measure (seven minutes, one day, one week and two weeks after the choice) was preceded by

a 35-second sample of their previous choice. This sample was the first 35 seconds of the original experience. For example, individuals who chose the “Friends” video-clip, saw a 35-second clip of the same video before each of the follow-up measures of happiness.

## STIMULI

This experiment employed two different sets of stimuli, set A and set B. Set A, is the exact same set of experiences used in experiment one. Set B consists of alternative versions of the same videos, songs and video-games, with purposely lower quality, to increase variance in my happiness measures and to overcome one possible limitation from experiment one.

In my first experiment, the mean happiness with experiential purchases, measured right after choice, was 4.71, with standard-deviation of 1.16 and values ranging from 1.67 to 7 (happiness was a composite measure of three items, ranging from 1 – 7, where 4 is a neutral point). Although my previous models were significant at different setpoints, I wanted to consider a set of stimuli that is more representative of the full range of possible happiness outcomes. In fact, in this new experiment, the new set of stimuli (set B) present lower initial happiness scores ( $M_{set B} = 4.12$ ,  $SD_{set B} = 1.61$  vs.  $M_{set A} = 4.62$ ,  $SD_{set A} = 1.08$ ,  $F(1,314) = 10.64$ ,  $p < .01$ .) and encompass the full range (1 – 7) of values used in the happiness scale. The stimuli set (A and B) variable did not interact with any of my variables of interest ( $F(1,253) = 0.31$ , NS for the interaction with memory,  $F(1,253) = 0.24$ , NS, for the interaction

with setpoint and  $F(1,253) = 0.62$ , NS for the three-way interaction with memory and setpoint) and, hence, I will use both sets indistinctly.

## RESULTS AND DISCUSSION

Participation rates were 100% for the in-lab portion of the study (right after choice and 7 minutes after choice), and decreased to 89.5% a day after, 86.7% a week after and to 81.9% two weeks after choice. As with my previous studies, the three items of the happiness scale were averaged into a unique happiness measure ( $\alpha = .84$ )

The data was analyzed using the same two-step procedure employed in the first experiment. In the first step, described previously by equation 2, I regressed the log-transformed happiness scores onto log-transformed time (in minutes since choice). The second step regressed the resulting slopes of the first step onto setpoint (the initial measure of happiness) and my memory manipulation (memory cue vs. control) and the interaction between the two terms. Equation 4 below describes this second step of the model.

$$\beta_{1i} = \beta_0 + \beta_a x_{memory} + \beta_b x_{setpoint} + \beta_c x_{memory} x_{setpoint} + \text{error} \quad (4)$$

This model shows a significant two-way interaction between setpoint (a proxy variable for the valence of the participant's experience) and memory (memory cue vs. control) ( $F(1,257^3) = 3.99$ ,  $p < .05$ ). This interaction is significant for the first three

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<sup>3</sup> 17 observations were considered outliers following the studentized residuals criterion (Cohen et al. 2003) and were eliminated from this analysis

data collection times (right after choice, seven minutes after choice and a day after choice). If taken into consideration the first four and five data collection periods, the interaction ceases to be significant ( $F(1,260) = 2.85$ ,  $p = .09$  and  $F(1,262) = 0.43$ , NS, respectively).

Much like figures 2.4 and 2.5, figures 2.6 and 2.7 depict the effects of memory and setpoint on the influence of time on happiness with the experience for the first three periods of time (right after the choice, seven minutes after the choice and a day after the choice) for individuals in the control and memory cues conditions, respectively. For clarity purposes, the model was fitted (Irwin and McClelland 2001) only at setpoints 1 (negative stimuli) and 7 (positive stimuli). Steeper lines mean faster hedonic adaptation. As predicted, individuals in the memory cue condition adapt faster than those in the control condition, especially when the model is fitted at setpoint 1 (negative purchases) ( $F(1,257) = 7.58$ ,  $p < .01$ ). When the model is fitted at setpoint 7 (positive purchases), the slopes in the memory condition are not different than the slopes in the control condition ( $F(1,257) = 0.52$ , NS). Interestingly, figures 2.6 and 2.7 seem to follow the same pattern of results found in experiment one (figures 2.4 and 2.5).

This second experiment brought evidence that the difference in hedonic adaptation rates for material and experiential purchases found in experiment one can be, at least partially, explained by differences in the way individuals recall the stimuli. Material purchases are promptly available and, as such, accurate representations of the benefits they provide. Experiential purchases, on the other

hand, live in our memories and are, consequently, prone to be inaccurately represented. When given a memory cue for their experiences, and hence a more accurate representation of them, individuals adapt faster to experiences, when compared to experiences where memory cues are absent.

This experiment was the first effort to describe the role of memory in the process of hedonic adaptation with different purchase types. As such, it has limitations. The targeted two-way interaction (memory by setpoint) holds significant for the first three periods of data collection (right after choice, seven minutes and a day after choice) and ceases to be significant afterwards. There is not enough data to explain why this model is not significant for the last two periods of data collection. One possible account relies on the fact that, like in experiment one, the data follow a power-law function (see figures 2.2 and 2.3) and, as such, much of the adaptation happens in the first three periods. Another speculative explanation relies on possible effects of the memory cue manipulation beyond the three initial periods. It is possible that, for the last two periods of data collection (one and two weeks after the lab session), the memory cue becomes less of a cue and more of a “new experience” of the individual's choice.

Another limitation resides in the fact that individuals in the memory cue condition saw (or listen to, or played) a 35-second snippet of their experience, whereas individuals in the control condition did not have wait for 35 seconds to start answering the follow-up questions. This difference (a 35-second wait) could be a potential confound and partially account for some of the effects. The next study



(experiment 3) will try to overcome this limitation.

## **Chapter 2.5: Experiment 3**

This experiment follows a similar procedure to the one employed in experiment 2. Participants are assigned to one of three between-subjects conditions (no memory cue, memory cue and elaboration condition). This design overcomes limitations of experiment 2 by (1) controlling for the amount of time each participant had to wait before she saw the dependent variables (happiness scale) and by (2) creating a condition where the recall task did not include a repetition, even if partial, of the stimulus experienced in lab. Asking participants to “re-experience” their in-lab choice is arguably different than providing them with an opportunity to remember their choice. In this study, a different manipulation of recall is introduced by asking individuals to elaborate about their choice using three or four short sentences.

### **METHOD**

Four hundred and thirty one students from The University of Texas at Austin participated in this experiment in exchange for extra-credit in an introductory marketing course. The procedure for this experiment followed that of the second experiment. Participants were exposed only to experiential purchases and were assigned to one of three between-subjects condition (control, memory cue and elaboration). Individuals in the control condition (no memory cue) chose one experience (a video clip, a video-game or a song) out of three possible options. Those

three options were randomly sampled out of a pool of six options. After consuming the experience, participants answered to the same happiness scale employed throughout these essays. Participants then proceeded to a seven-minute break.

Back from the break, participants in this condition (no memory cue) proceeded with the second part of the study and, before they received the first set of follow-up questions (7 minutes after the choice), they were instructed to:

Please wait while the system retrieves information necessary for the final part of the study.

This message was displayed in the computer monitor for 35 seconds. After answering the in-lab set of follow-up questions, participants were debriefed with instructions to answer the internet-based set of follow-up questions a day, a week and two weeks after the lab session. Before answering each internet follow-up questionnaire, participants received the following instruction and had to wait for 35 seconds.

“Please wait while the questions are being retrieved from the servers...”

Individuals in the memory cue condition followed the exact same protocol as those in the control condition. However, instead of waiting 35 seconds before answering the happiness scale in the in-lab and internet follow-up questionnaires, they watched (listened to, or played) a 35 seconds snippet of their experience. These 35 seconds were the first 35 seconds of the original chosen experience.

Finally, individuals in the elaboration condition, instead of waiting 35 seconds or receiving a 35-second snippet of the chosen experience before answering the follow-up questions, had to elaborate about their choice. Specifically,

participants in this condition were asked to

“Please describe in three or four sentences what you watched, played or listened to in the lab [the first part of the study] (the video clip, the song, or the video game).”

this task was employed to more accurately mimic the natural recalling process individuals go through when remembering an experience. After describing their chosen experience, individuals in this condition received the set of dependent variables (happiness scale).

In summary, each participant, regardless of the condition she was assigned to, chose one experience and consumed it in the first part of the lab session. In the second part of the lab session and in every follow-up questionnaire (7 minutes, a day, a week and two weeks later), participants had to wait around 35 seconds to answer the set of dependent variables. Individuals in the control (no memory cue) condition had to wait “until the questions were retrieved from the server” for 35 seconds. In the memory cue condition, individuals had to re-experience a 35-second snippet of their choice. Finally, individuals in the elaboration condition had to briefly describe their choice.

## **STIMULI**

This experiment employed one set of experiences (set B). Set B was chosen to be the target stimuli of this study to maximize variance in my participants responses and to encompass the full range of possible responses (1 through 7, in the happiness scale). It is the same “set B” used in my previous experiment two.

## RESULTS AND DISCUSSION

Participation rates were 100% for the in-lab portion of the study (right after choice and 7 minutes after choice), and decreased to 89.3% a day after, 79.3% a week after and to 68.9% two weeks after choice. As with my previous studies, the three items of the happiness scale were averaged into a unique happiness measure ( $\alpha = .88$ )

The data was analyzed using the same two-step procedure employed in the first two experiments. In the first step, described by equation 2, I regressed the log-transformed happiness scores onto log-transformed time (in minutes since choice). The second step regressed the resulting slopes of the first step onto setpoint (the initial measure of happiness) and my memory manipulation (control vs. memory cue vs. elaboration) and the interaction between the two terms.

Using planned orthogonal contrast codes, I found a significant interaction between memory manipulation and setpoint, such that the slopes in the memory cue condition are significantly different from those in the control and elaboration conditions ( $F(1,339) = 4.95, p < .05$ ). However, slopes in the elaboration condition are not significantly different from those in the control condition ( $F(1,339) = 0.14, NS$ ).

Inspection of figures 2.8 (control condition), 2.9 (memory cue condition) and 2.10 (elaboration condition) shows that the pattern found in the memory cue condition is similar to the one found in the same condition of experiment two. Like in experiment two, individuals in the memory cue condition adapt faster than those in the control (no memory cue) condition. Figures 2.8 and 2.10 also show that slopes in

the control condition follow an almost identical pattern as those in the elaboration condition, as also evidenced by the null effect previously reported.

A different set of orthogonal contrast codes was used to test whether the elaboration manipulation leads to different slopes than those found in the memory cue condition. In fact, slopes in the memory cue condition (figure 2.9) are significantly different than those found in the elaboration condition (figure 2.10;  $F(1,339) = 4.58, p < .05$ ). Similar to the interaction reported in experiment two, the interactions reported here hold significant only for the first three periods (right after choice, seven minutes and one day after choice) of the data collection process.

The results of this experiment qualify my findings from experiment two. Briefly, in experiment two I have found that memory cues lead to faster adaptation, when compared to a scenario with no memory cues. This set of effects maps onto the distinction between adaptation rates for material and experiential purchases. In other words, one of the possible drivers of the difference between adaptation rates for material and experiential rates might be the tangibility of material purchases and consequent ease of recall.

In this experiment I have replicated the findings of experiment two (slopes for the memory cue condition are marginally different from those in the control condition;  $F(1,339) = 2.92, p = .08$ ) with a cleaner control condition. More importantly, I have shown that a specific type of recall is likely driving the distinction between adaptation to material and experiential purchases. Briefly elaborating on the choice made in lab does not seem enough to warrant faster

adaptation rates<sup>4</sup>. The recall has to involve some “re-experiencing” of the choice made in lab, like in the procedure for the memory cue condition.

This “re-experiencing” of the choice is more aligned with the nature of material purchases. Every time consumers see or use a product, they are re-experiencing the product. In this sense, giving consumers a cue for the chosen experience is likely to bring experiential purchases closer to material purchases when it comes to adaptation rates.

In the last three experiments I have shown that individuals adapt more slowly to experiential purchases, when compared to material purchases, and that this difference is partially attributed to how individuals remember their past purchases. Adaptation to material purchases happens fast likely because they are often present and, hence, memory for this kind of purchase is bound to be more accurate than memory for experiential purchases. I have shown that, given a memory cue, adaptation happens faster and the pattern of results approaches that of material purchases in experiment one.

How fast individuals adapt to material and experiential purchases has immediate implications for future choices. Over time, successive purchases can teach consumers that the enjoyment of one specific type of purchase lasts longer than others (i.e., that different purchases have different adaptation rates). This knowledge, in turn, is likely to influence future choice. In fact, Wang, Novemsky and Dhar (forthcoming) and Nelson and Meyvis (2008) have shown that individuals

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4 A follow-up analyses, testing the effect of intensity of elaboration (measured through the average number of words used to elaborate) on the influence of time on happiness (hedonic adaptation) failed to provide significant effects  $F(1,222) = 0$ , NS.

make choices of experiences considering the intensity of the experience and how fast they will adapt to them.

Wang, Novemsky and Dhar (forthcoming) have also shown that individuals hold accurate beliefs about hedonic adaptation to products, but fail to take those beliefs into account when making decisions about different products. I extend this question to the domain explored in this dissertation. Do individuals hold accurate beliefs about adaptation to different purchase types? Do they predict faster adaptation rates for material purchases? Knowing the answer to those questions will help to illuminate the choices individuals make between experiential and material purchases. I will address such questions in my next experiment.



## Chapter 2.6: Experiment 4

In this experiment I test whether individuals hold accurate beliefs about hedonic adaptation to material and experiential purchases. Participants were assigned to one of 2 x 2 between subjects condition (experienced vs. predicted adaptation, and material vs. experiential purchases). Data for the experienced adaptation conditions come from experiment one (individuals in that experiment chose real material and experiential purchases and actually went over the hedonic adaptation process, as described in that study).

### **METHOD**

Five hundred twenty five students from The University of Texas at Austin participated in this experiment in exchange for extra-credit in an introductory marketing course. Three hundred and thirty five students were assigned to the experienced adaptation conditions. Their responses constitute the data set used in experiment one. The remaining one hundred and ninety participants were assigned to the anticipated adaptation conditions.

Participants in the experienced adaptation conditions followed the method described in experiment one. In brief, they were assigned to either a (experienced) material or an (experienced) experiential purchase condition. In both conditions, they were given a choice of a purchase (an object for the material purchase and an experience for the experiential purchase condition) and answered the same

happiness scale used throughout this dissertation immediately after the consumption, seven minutes, one day, one week and two weeks later.

Students in the anticipated adaptation conditions followed a similar procedure. They were assigned to either a material or experiential purchase condition. In this anticipated experiential condition, the participants were told that they could use three “lab dollars” to purchase one experience from a set of three possible options (a video clip, a song, or a video game) to consume (i.e., watch the video, listen to the song, or play the video-game) in the lab session. The three items presented to the respondents were chosen randomly from a pool of six possible experiences (two video clips, two songs, and two video-games, and were each priced at \$3). After the choice task, participants watched the video, listened to the song, or played the video-game in the experiential purchase condition. Once the experience was over, participants answered the same 3-item happiness scale used in my previous studies. Then, participants were instructed to predict how happy they would be seven minutes, a day, a week and two weeks from that moment. Specifically, they saw the following instructions:

“We are now going to ask you to picture yourself 7 minutes [one day, one week, two weeks] from now and to predict how you would feel regarding your purchase of a [their choice]. We are showing you the same questions we showed you before but we will ask you to predict how you would feel 7 minutes [one day, one week, two weeks] from now. Your answers may be the same or they may be different.”

Individuals in the anticipated material condition went through the same procedure. However, they were given the choice of an object, instead of an

experience. They received their chosen product and took it home with them. The stimuli employed in the anticipated material condition were exactly the same as those employed in the experienced material condition (described in experiment one).

## **RESULTS AND DISCUSSION**

Both data sets, data from experienced material and experiential purchase conditions from experiment one and the new data from anticipated material and experiential purchase conditions, were merged into one dataset, containing 2 x 2 factors (experienced material, experienced experiential, anticipated material and anticipated experiential purchases). Whereas participation rates in the experienced conditions varied from 100% for in-lab collection (immediately after choice and seven minutes after choice) to 61.1% for the last follow-up questionnaire (two weeks after the in-lab session), participation rates for the anticipated conditions were 100%, since there were not internet follow-up questionnaires.

Data analysis followed the same steps employed in experiment one. In the first step (equation 2), the log-transformed happiness scores were regressed onto the log-transformed time in minutes (1, 7, 1440, 10080 and 20160 minutes after the choice).

In the next step, the resulting slopes from the  $\log(\text{happiness}) = \log(\text{time})$  model were regressed onto the setpoint (the composite happiness scale, measured right after choice), type of purchase (material vs. experiential), perspective (whether adaptation was experienced or anticipated) and the interaction between those terms.

Equation 5 describes this step.

$$\beta_{li} = \beta_0 + \beta_a x_{\text{type of purchase}} + \beta_b x_{\text{perspective}} + \beta_c x_{\text{setpoint}} + \beta_d x_{\text{type of purchase}} x_{\text{setpoint}} + \beta_e x_{\text{type of purchase}} x_{\text{perspective}} + \beta_f x_{\text{setpoint}} x_{\text{perspective}} + \beta_g x_{\text{type of purchase}} x_{\text{perspective}} x_{\text{setpoint}} + \text{error} \quad (5)$$

This model shows a significant main effect of setpoint ( $F(1,511) = 4.06$ ,  $p < .05$ ), which is a proxy for the effect of experience valence. It also shows main effects for type of purchase and perspective ( $F(1,511) = 16.12$ ,  $p < .01$  and  $F(1,511) = 34.49$ ,  $p < .01$  respectively). The two-way interaction between setpoint and perspective is significant ( $F(1,511) = 6.24$ ,  $p < .05$ ), so is the interaction between type of purchase and setpoint ( $F(1,511) = 12.01$ ,  $p < .01$ ), replicating the findings of experiment one.

However, more relevant to the purpose of this study, this model shows a marginally significant three-way interaction between setpoint, type of purchase and perspective ( $F(1,511) = 3.36$ ,  $p = .06$ ). Like in the previous two experiments, this interaction is only significant for the first three periods of time (right after choice, seven minutes and one day after choice). Figures 2.11 and 2.12 plot this interaction for the first three periods of time. The x axis represent log-transformed time (in minutes) and the y axis represent log-transformed happiness scores. Once again, for ease of interpretation, the model was fitted (Irwin and McClelland 2001) at setpoints 1 and 7 (“negative” and “positive” purchases respectively).

Figure 2.11 examines the differences between anticipated (dashed lines) and experienced adaptation (full lines) for positive (top lines, in gray) and negative

purchases (bottom lines, in black), for material purchases. Individuals in my sample are pretty accurate when predicting adaptation to positive material purchases ( $F(1,511^5) = 1.43$ , NS), but inaccurate when predicting adaptation to negative material purchases ( $F(1,511) = 11.17$ ,  $p < .01$ ). In fact, individuals in my sample neglect adaptation to negative material purchases and predict sensitization (a negative stimulus becoming even more aversive over time).

Figure 2.12 follows the same format of figure 2.11. It shows differences between anticipated (dashed lines) and experienced adaptation (full lines) for positive (top lines, in gray) and negative purchases (bottom lines, in black), for experiential purchases. Overall, individuals overestimate adaptation rates for positive experiential rates and expect faster sensitization for negative experiential purchases ( $F(1,511) = 8.16$ ,  $p < .01$  and  $F(1,511) = 4.22 < .05$  respectively).

Interestingly, individuals are accurate when predicting hedonic adaptation to positive material purchases. They also predict faster hedonic adaptation rates, when compared to the actual rates, for positive experiential purchases. Taken together, this set of results would explain why individuals would chose material purchases over experiential purchases, a topic of concern for public policy makers and for researchers concerned with the increasing level of materialism in our society (Frank 1999; Kasser 2002).

These results are consistent with the overall theme that individuals are not accurate when predicting adaptation to experiences (Kahneman and Snell 1992;

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<sup>5</sup> 6 observations were considered outliers following the studentized residuals criterion (Cohen et al. 2003) and were eliminated from this analysis

Nelson and Meyvis 2008). It is also partially consistent with results from Wang, Novemsky and Dhar (forthcoming). The authors have found that, although individuals hold accurate beliefs about hedonic adaptation, they do not take them into consideration when making decisions. By bringing attention to the duration (different periods of time) of the experience, individuals become more accurate and, then, predict hedonic adaptation rates correctly for different products. This seems to be the case for my model, but only for positive experiential purchases. When fitted at positive material purchases, predictions of hedonic adaptation are relatively accurate.

Kahneman and Snell (1992) have shown that individuals predict sensitization (as opposed to adaptation) to unpleasant stimuli (e.g., to plain yogurt). Such pattern of results seems to be present in my model. For both negative material and experiential purchases, individuals in my sample predict sensitization, as opposed to adaptation.

## Chapter 2.7: General Discussion

In this second essay, I mapped actual hedonic adaptation for material and experiential purchases, and found that adaptation happens more quickly for material than for experiential purchases. Thus, it is not surprising that experiences end up inducing a greater variance in happiness scores. I even showed that, after only a day of adaptation, purchases that started at the same level of rated happiness had diverged enough to induce a purchase type by valence interaction in retrospective happiness ratings.

This second essay also shows that differences in the way material and experiential purchases are recalled might be underscoring the differential in hedonic adaptation rates for both purchase types. The fact that experiential purchases are intangible and, after their consumption, reside only in our memories makes them prone to be remembered inaccurately. As time passes, the momentarily lost luggage, the broken door knob at the hotel room, and the smell of freshly cut grass from the vacation at the Bahamas slowly fade away and we are left with an overall feeling for that experience; a summary of the central aspects of the experience (Aaker, Drolet and Griffin 2008). This vagueness and volatility not only make experiences more open to positive reinterpretation (Mitchell et al. 1997), but arguably more open to distortions in general. Material purchases, on the other hand, are tangible and do not reside exclusively in our memories. Their benefits are usually manifested in their physical representations. There is little room for uncertainty about a product

when you are interacting with this product on a daily basis, or when you have access to the product and can easily recall its attributes.

My second and third experiments have shown that giving individuals a cue, a reminder of their experiences, makes them adapt faster to those experiences than if no cues were given. In fact, the pattern of results from the memory cue conditions seems similar to those of the material purchase condition, bringing additional support to the argument that memory might be underlying my results from the first essay.

Naturally, differences in recall might not be the only explanation for different hedonic adaptation rates across purchase types. Other answers may lie in the human condition. The General Social Survey has consistently suggested that marriage and family experiences increase happiness and the negatives of those experiences (divorce, death of a loved one) have the opposite effect (Easterlin 2003). In his review of the correlates of happiness, Argyle (1999) finds that positive social interaction is a major source of happiness; many experiential purchases involve activities with other people, including family. In addition to social interaction, the accomplishment of goals and the ability to be lost in a task (Csikszentmihalyi and Csikszentmihalyi 1988) seem to be correlated with happiness. Even solitary experiential purchases, such as the purchase of an on-line game, allow for the possibility of this kind of flow. In addition, Argyle (1999) shows in his meta-analysis that exercise increases happiness. Although it is a less common component of experiential purchases than social interaction and active engagement, exercise



nevertheless may vary by the experiential/material distinction (e.g., walking around an amusement park or zoo versus sitting in a car). Thus, positive experiences may be correlated with the basics of human happiness, and negative experiences may represent the thwarting of these basics. Adaptation may be slower for many experiences for this reason; future research can show whether experiential purchases are a proxy for more fundamental human needs.

Other inherent characteristics of material and experiential purchases might be also driving the difference in hedonic adaptation rates. Recently, Redden (2008) has shown that individuals satiate more on the aspects they use to categorize an episode. He found that the specificity of a stimulus (subcategorization) makes satiation slower. With that, people would be happier over time if they perceive a given stimulus as “one of a kind.” One can easily make the argument that experiences are more unique, less likely to induce the feeling of repetition and, hence, less likely to induce satiation. This would explain (at least for the positive domain) why individuals would stay happier longer with experiences, when compared to an alternative material purchase.

This second essay has also brought evidence that individuals mispredict hedonic adaptation for both experiential and material purchases. More specifically, I found that individuals expect faster adaptation rates for experiential purchases, when compared to actual, experienced rates. I also found that individuals are pretty accurate when it comes to positive material purchases and, interestingly, expect the opposite of hedonic adaptation (sensitization) for negative material purchases.

Taken together, these results might explain why material purchases are often chosen to the expense of experiential purchases (Frank 1999).

The set of experiments reported in this essay not only advances our understanding on the processes underlying the effect of purchase types on our happiness, but also sheds light on the reasons why individuals adapt more slowly to experiential purchases and how inaccurate they are when predicting such adaptation. Those findings have implications for policy makers and for the growing (Mochon, Norton and Ariely 2008; Nelson and Meyvis 2008; Wang et al. forthcoming) but scarce experimental body of evidence on hedonic adaptation (Frederick and Loewenstein 1999). More importantly, this is the first empirical account of hedonic adaptation rates for different purchase types (as suggested by Frank 1999) and its underlying causes and implications.

Along with its empirical contributions, this essay sets forth interesting questions that deserve the attention of future research. As pointed out by the general discussion chapter in the first essay, this set of studies did not delve into the nuances and fine distinctions between material and experiential purchases. Instead, it chose to communicate with previous research on the experience recommendation (e.g., Scitovsky 1976, Van Boven and Gilovich 2003) and to remain close to what consumers call an experiential and a material purchase. A cleaner manipulation of the type of purchase distinction requires knowing exactly where the line is drawn between those two types of purchases and I do not have a grasp on the one characteristic that distinguishes experiential from material purchases.

Another intriguing question is related to the fact that experiments two through four failed to account for effects passed the one-day-after follow-up measures. As reported in the first experiment, adaptation seems to happen quite fast. Experiments two, three and four show that whatever effect of memory, or perspective, on hedonic adaptation is dimmed after just one day. This might be a function of my stimuli. Future studies may answer whether more involving purchases have overall less steep adaptation rates and, hence, individuals take longer to start adapting to them.

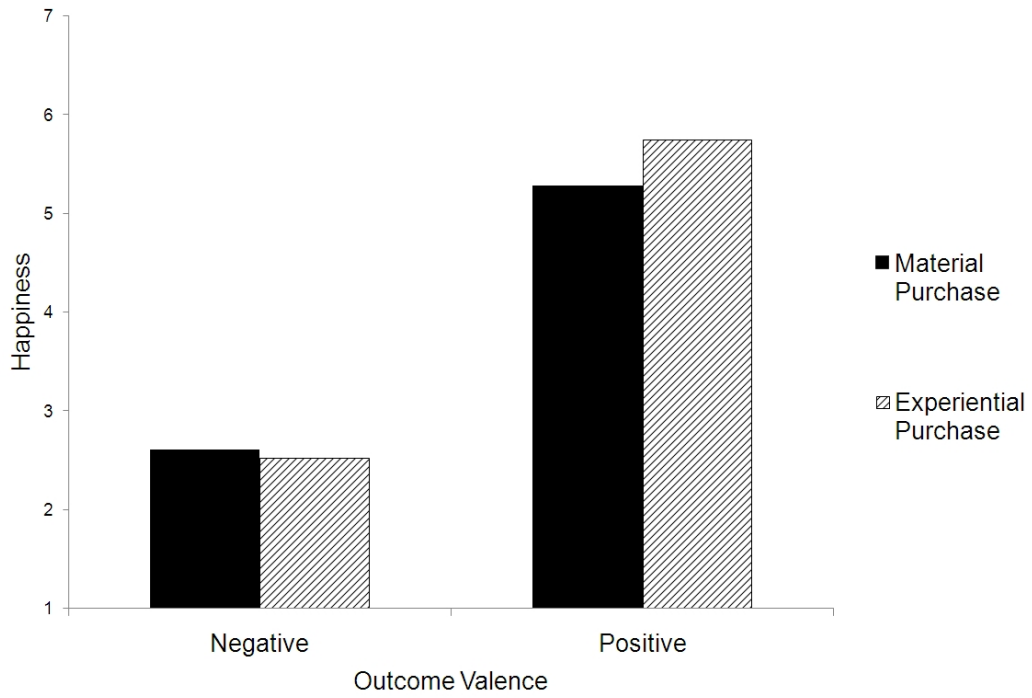
Different stimuli may also affect the direction of the results in the memory studies (experiments two and three). I have found that memory cues accelerate the hedonic adaptation process. However, other authors (e.g., Frederick and Loewenstein 1999) would make the case that memory cues can reset the hedonic reference point and, consequently, make adaptation slower. At this point, I have no theory underlying when each effect would happen, except for a difference in involvement with the experiential purchase. Being reminded of a nice video you watched in-lab might be pleasant, but it might also make you realize it has little to do with your happiness in life. Alternatively, being reminded of a great vacation with your family might be pleasant and make you realize how important moments like these are. In this last example, the hedonic reference point would be partially reset and adaptation would take longer to occur.

This set of studies departs from the assumption that the nature of material purchases will ensure more accurate recall for these purchases. It is a sound

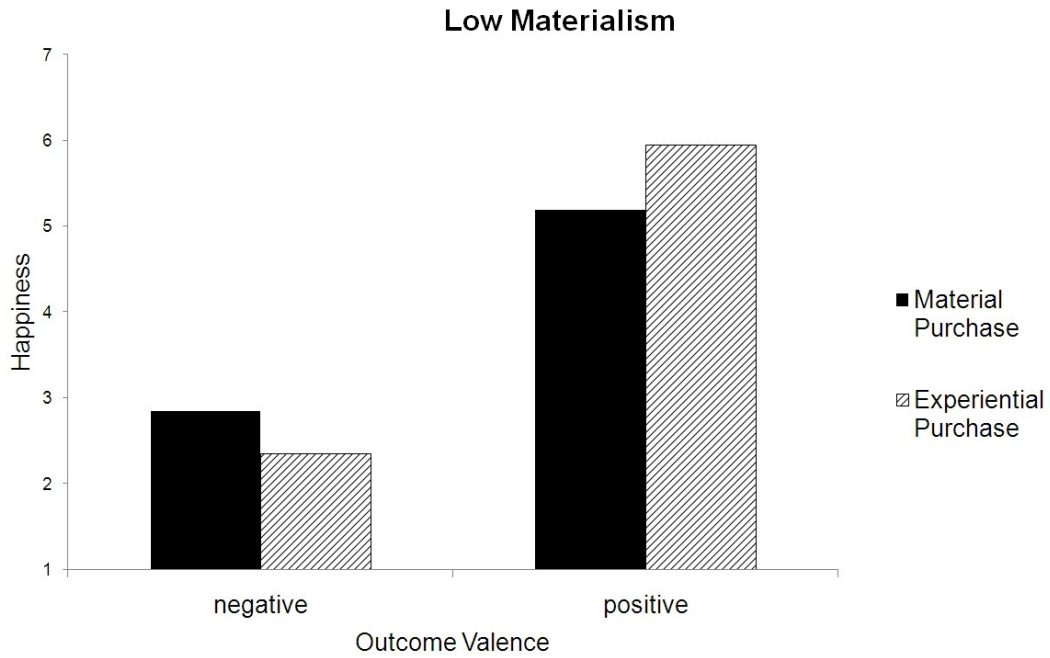
assumption. An average product is less complex than an average experience. This complexity, or lack thereof, along with the tangibility of the product could warrant more accurate recall. However, experiences can also be more memorable than material purchases (Van Boven and Gilovich 2003). Therefore, the question of whether recall of material purchases is, indeed, more accurate is an empirical question to be answered in future studies.

Finally, another extension of this essay lies on the effects of anticipation of hedonic adaptation on consumer choice. I have previously argued that the miscalculation of hedonic adaptation rates for material and experiential purchase would normatively lead to a preference for purchases with slower anticipated adaptation rates. However, I have not tested whether this anticipation would actually lead to preference and consequent choice. I would expect such effect, based on results from previous research (Wang, Novemsky and Dhar forthcoming) that point to the fact that, when brought to individuals' attention, hedonic adaptation is likely to be incorporated in their decisions.

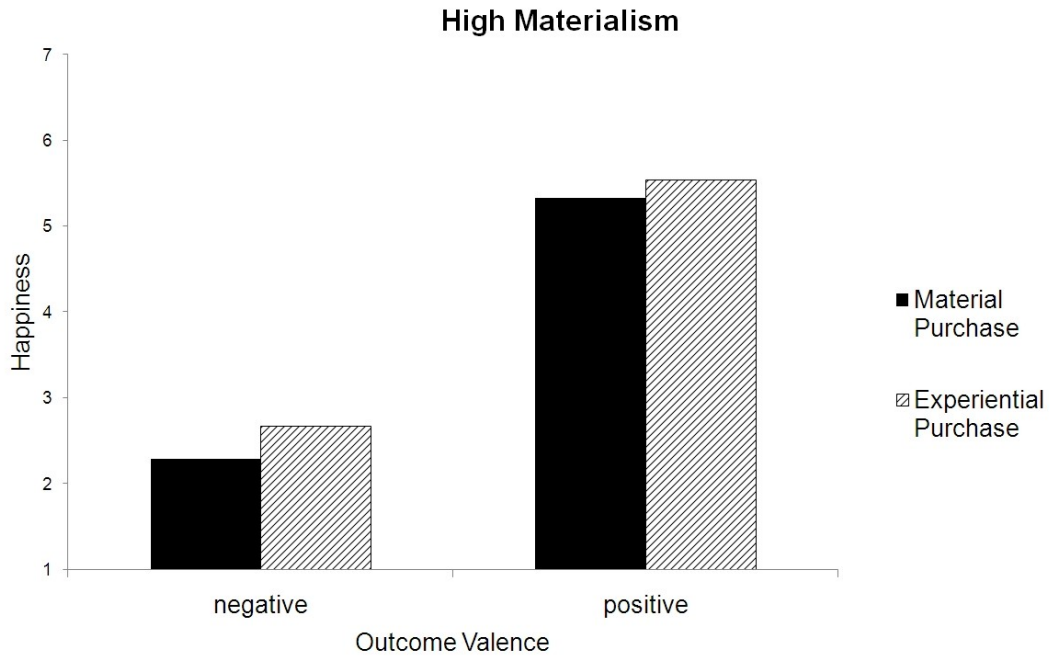
**FIGURE 1.1: Mean Happiness Rating by Outcome**



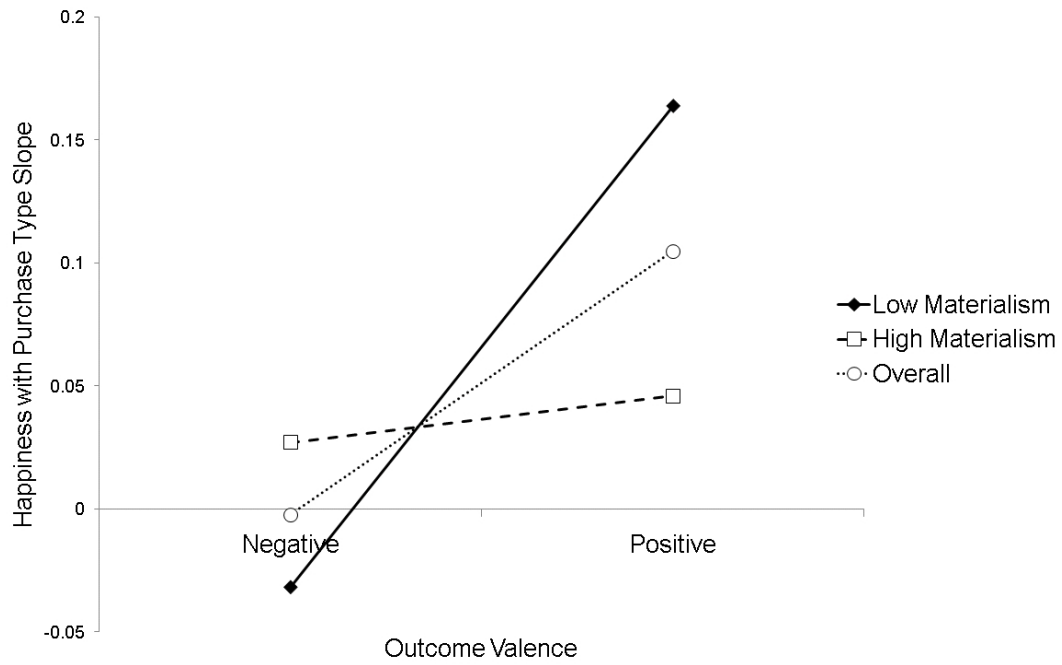
**FIGURE 1.2: Purchase Type by Outcome Valence by Materialism Interaction – Low Materialism**



**FIGURE 1.3: Purchase Type by Outcome Valence by Materialism Interaction – High Materialism**

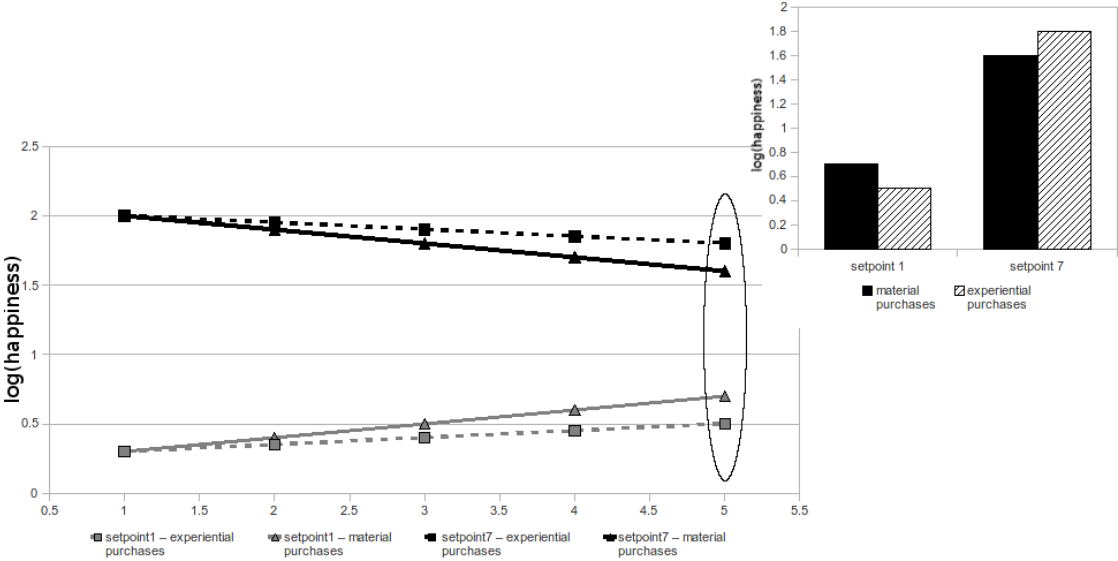


**FIGURE 1.4: Purchase Type on Happiness Slopes by Outcome Valence and Materialism**

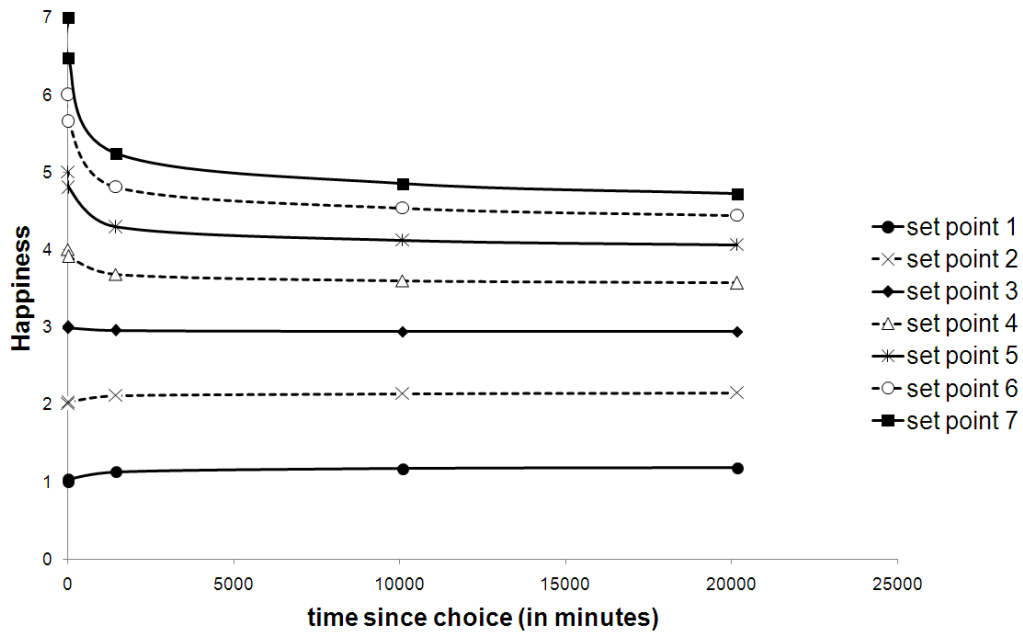




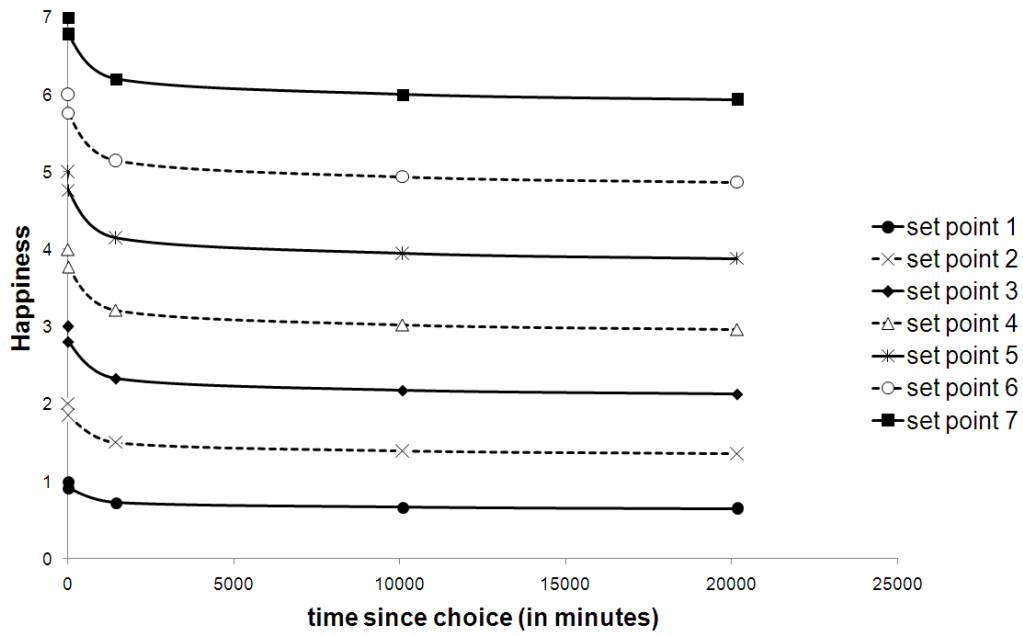
**FIGURE 2.1: How Different Hedonic Adaptation Rates for Material and Experiential Purchases Lead to Different Happiness Levels for Material and Experiential Purchases**



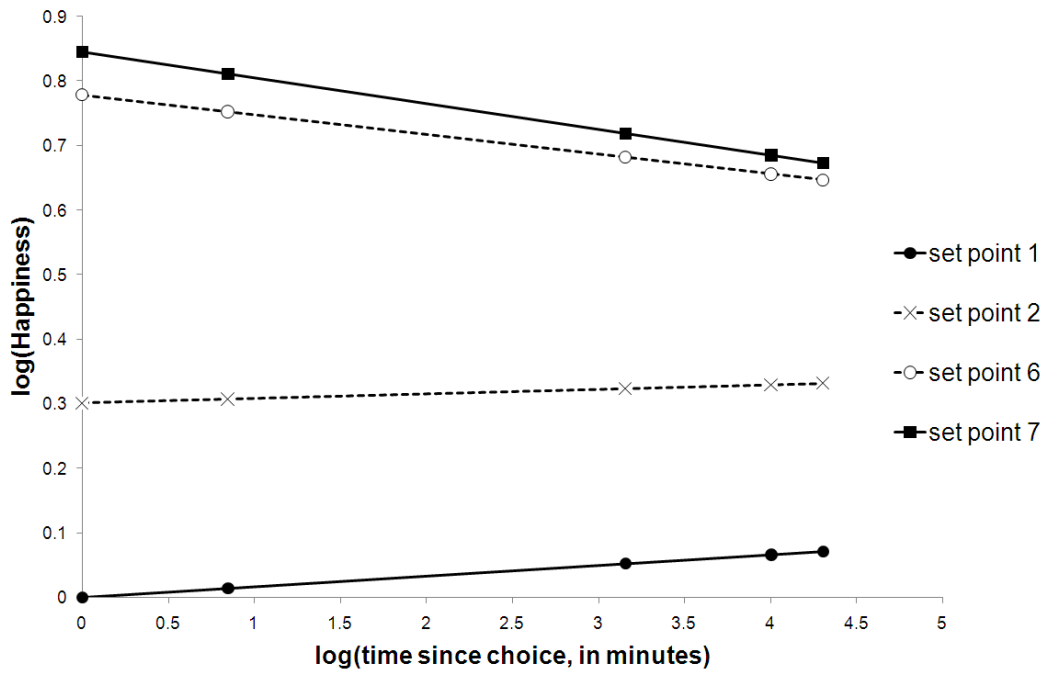
**FIGURE 2.2: Happiness with Material Purchases Over Time  
(in minutes)**



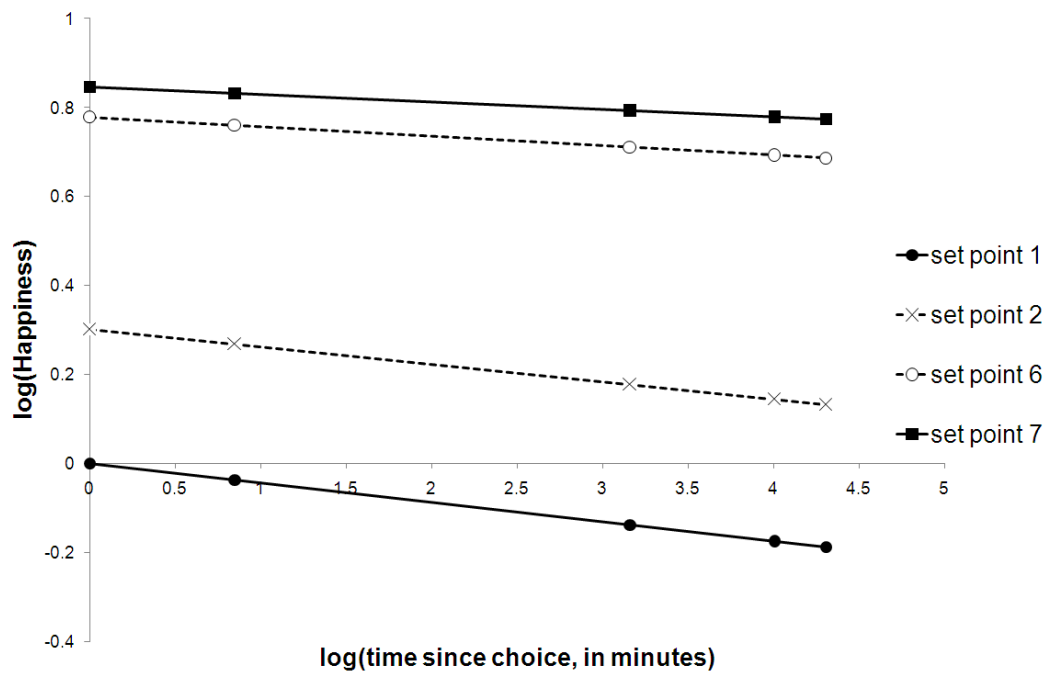
**FIGURE 2.3: Happiness with Experiential Purchases Over Time  
(in minutes)**



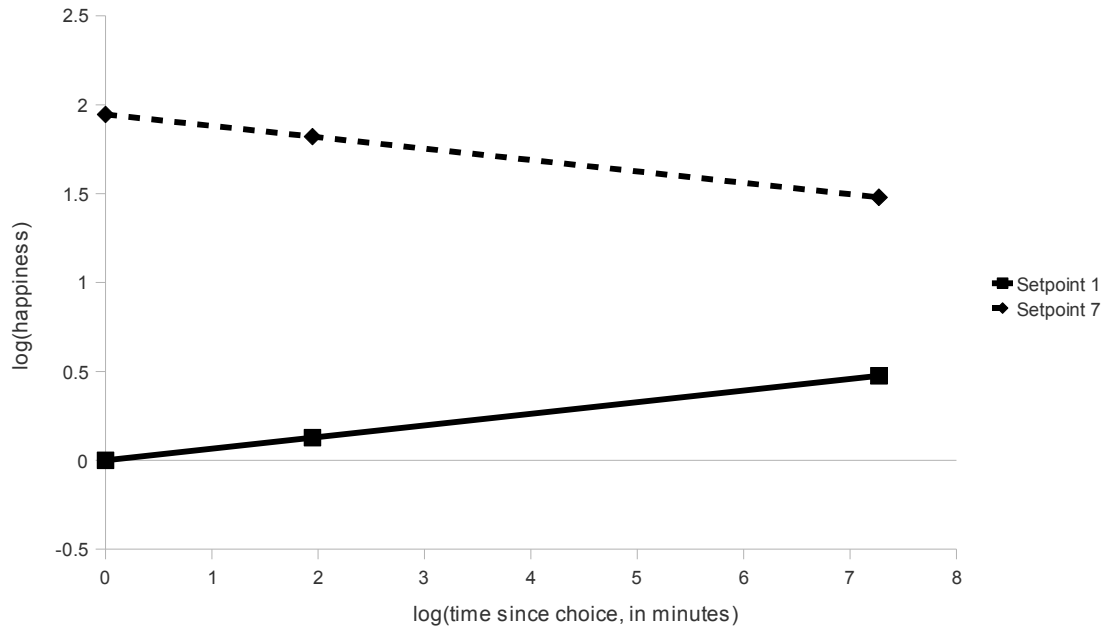
**FIGURE 2.4:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Material Purchase Condition**



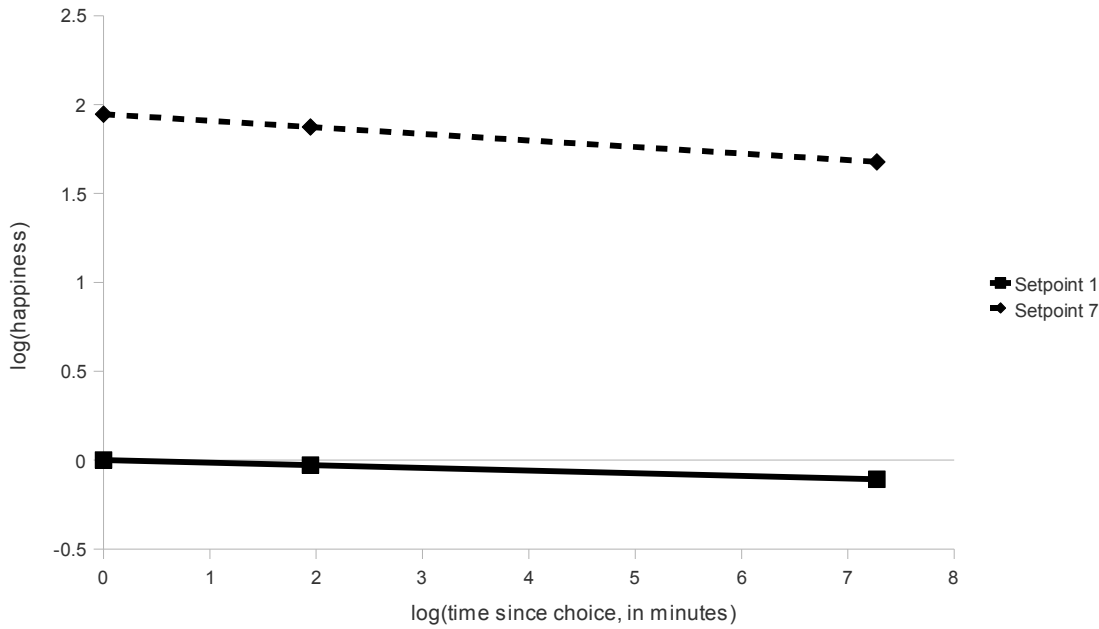
**FIGURE 2.5:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Experiential Purchase Condition**



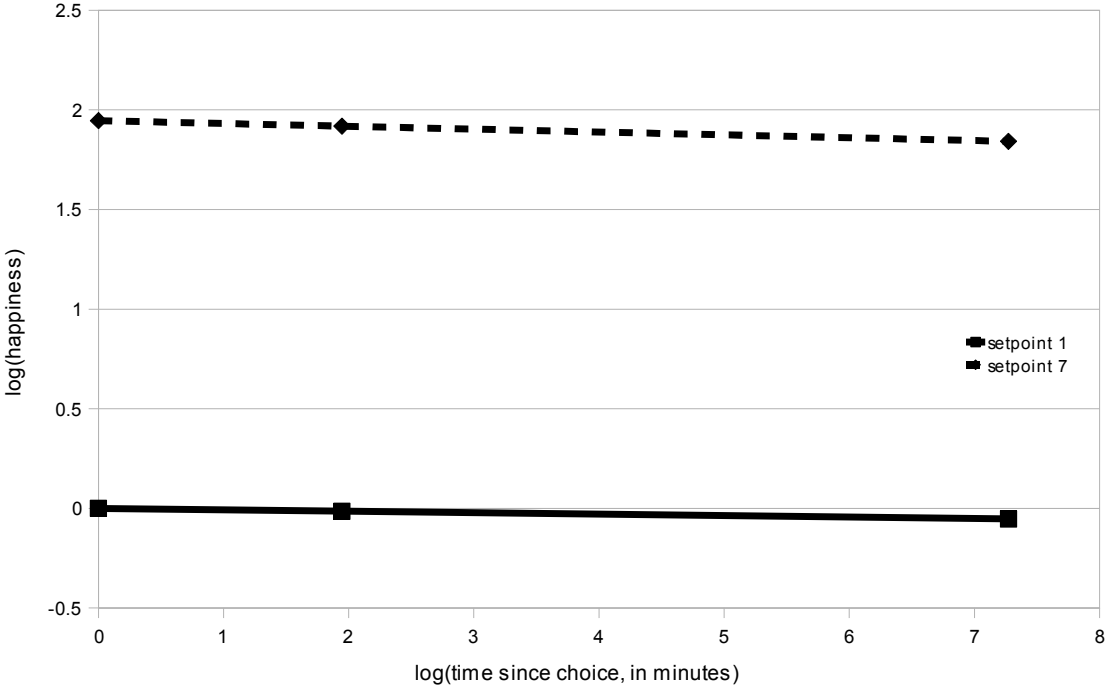
**FIGURE 2.6:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Memory Cue Condition**



**FIGURE 2.7:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – No Memory Cue Condition**

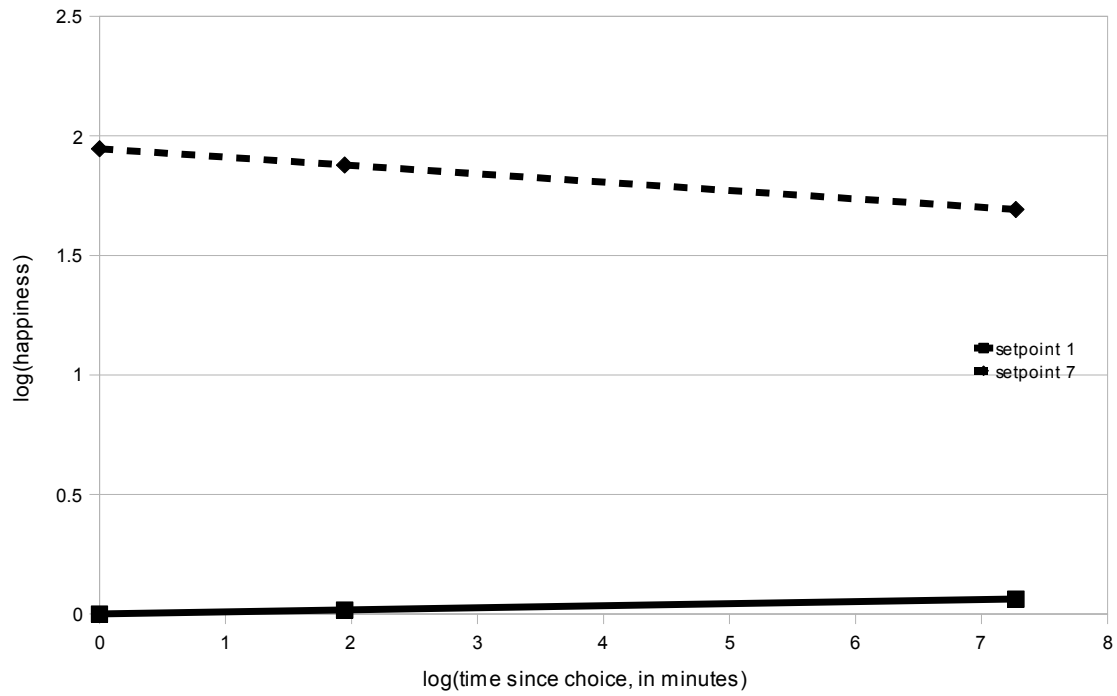


**FIGURE 2.8:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Control (No Memory Cue) Condition**

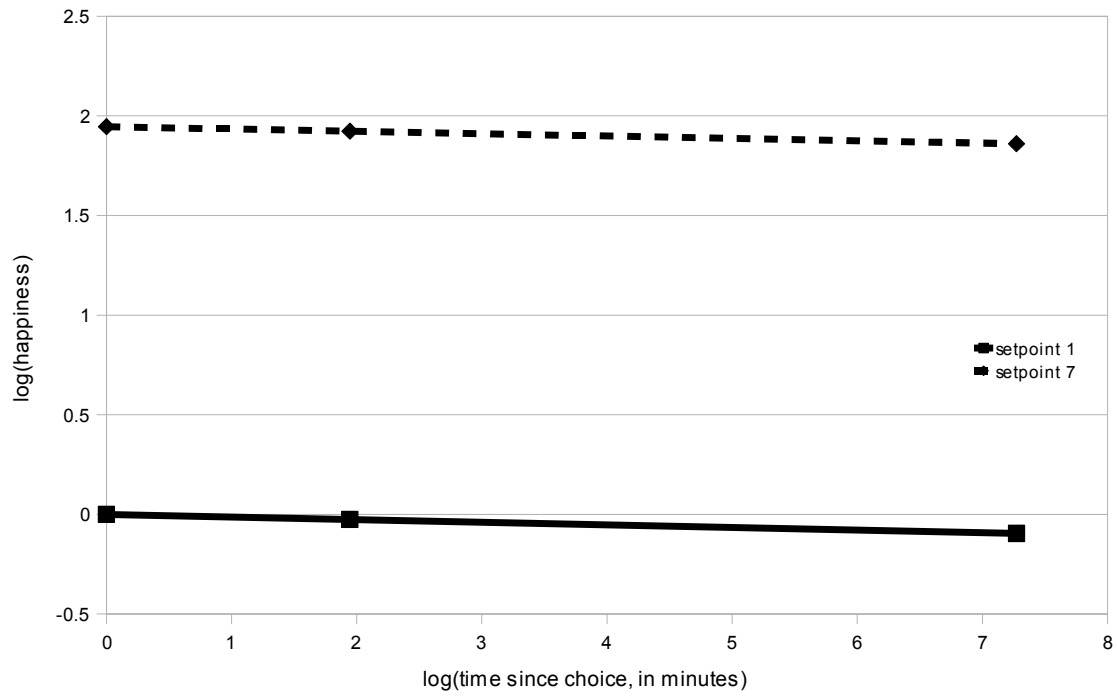




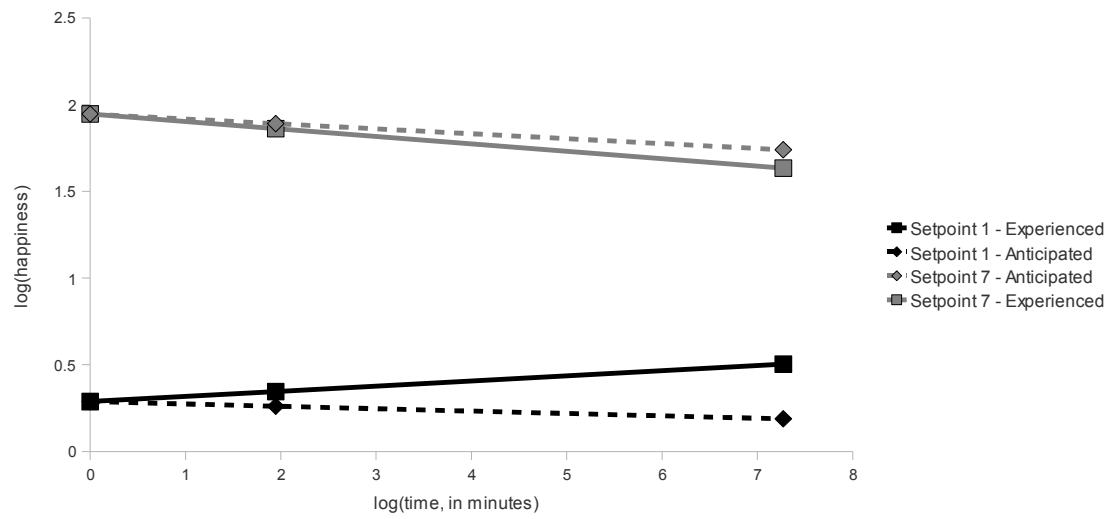
**FIGURE 2.9: log(Happiness) by log(Time) – Memory Cue Condition**



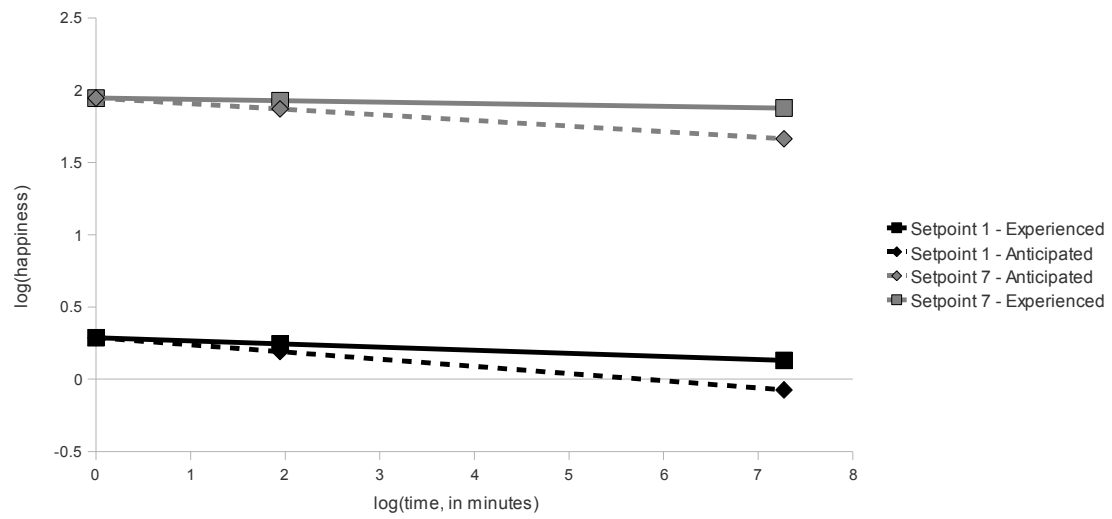
**FIGURE 2.10: log(Happiness) by log(Time) – Elaboration Condition**



**FIGURE 2.11:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Experienced and Anticipated Conditions for Material Purchases**



**FIGURE 2.12:  $\log(\text{Happiness})$  by  $\log(\text{Time})$  – Experienced and Anticipated Conditions for Experienced Purchases**



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