DIPLOMARBEIT

Let Your Older Self Decide: Effects of Regulatory Focus and Temporal Variations of Anticipated Regret on Self-Control and Indulgence

verfasst von

Cornelia Kastner

angestrebter akademischer Grad

Magistra der Naturwissenschaften (Mag. rer. nat.)

Wien, 2014

Studienkennzahl lt. Studienblatt: A 298
Studienrichtung lt. Studienblatt: Diplomstudium Psychologie
Betreuer: Prof. Dipl.-Psych. Dr. Arnd Florack
Acknowledgements

I wish to thank Prof. Dr. Arnd Florack for his support and guidance, as well as his patience throughout the whole process of writing this paper.

I further want to thank my parents and friends for encouraging me throughout the last year and always putting up with my zombie-like appearance in times of hard work.

My special thanks go to Herbert and Christine, Vanessa, Kathy and David for their suggestions and moral support. You guys rock!
# Table of Contents

Abstract ........................................................................................................................................... 1

Self-Control Research .................................................................................................................. 2

Self-Control and Anticipated Regret ......................................................................................... 4

Temporal Effects On Anticipated Regrets .................................................................................. 6

Regulatory Focus and Anticipated Regret .................................................................................... 9

Research Question ....................................................................................................................... 11

Hypotheses ..................................................................................................................................... 12

Method ........................................................................................................................................... 14

Participants and Design .............................................................................................................. 15

Materials ........................................................................................................................................ 16

Results ........................................................................................................................................... 19

Choice .......................................................................................................................................... 19

Attractiveness ............................................................................................................................. 21

Exploratory Analysis .................................................................................................................... 26

Discussion ...................................................................................................................................... 28

Feelings of Guilt and Missing Out ............................................................................................. 30

Relevance and Practical Implications .......................................................................................... 31

Limitations and Future Research ............................................................................................... 32

References ...................................................................................................................................... 35

Appendix ........................................................................................................................................ 39

List of Figures ............................................................................................................................... 39

List of Tables .................................................................................................................................. 40

Additional Tables .......................................................................................................................... 41

Format of the Online-Experiment ............................................................................................... 43
Abstract

The current study is based on previous results about the influence of temporal manipulations of anticipated regret on indulgence, showing that asking people to anticipate post-decisional regret for their decisions in ten years leads to more indulgence than anticipation of regret in one day (Keinan & Kivetz, 2008). Further, recent studies (Leder, Florack, & Keller, 2013) on anticipated regret and regulatory focus are considered, which suggest that different regulatory focus orientations lead to a different type of regret being produced. These two approaches were integrated in the current study, testing the existence of a moderating influence of chronic regulatory focus on the previously mentioned temporal effects. Participants took part in an online experiment in the form of a lottery draw with four experimental manipulations. Indulgence was measured by assessing the attractiveness of a hedonic versus utilitarian price and with a real choice task. Results show that the original pattern of people anticipating their regret in ten years acting more hedonically could be largely replicated. When chronic regulatory focus was included, its moderating influence showed when attractiveness was used as dependent variable; only participants with a prevailing prevention focus then rated the hedonic price as more attractive due to the distant-future manipulation. Promotion focused individuals, on the other hand, did not show an according effect. Possible reasons for these results, implications of a data exploration and suggestions for future research are discussed.
Let Your Older Self Decide: Effects of Regulatory Focus and Temporal Variations of Anticipated Regret on Self-Control and Indulgence

Ted, let me tell you the secret to life. Every time I make a decision on what to do on a given night, I ask myself: “What would make the best memory twenty years from now?” So I let twenty-years-from-now-Barney call the shots and it always works out! (Bays, Thomas, & Fryman, 2013)

This is advice given to Ted Mosby, a character from the TV series “How I Met Your Mother”, by his friend Barney Stinson when the former is undecided about whether to accompany his friend to a “legendary” evening event or rather be responsible, stay at home and prepare for a lecture the following day.

Barney is trying to get his friend to indulge by making him focus on the distant future, and past research (Keinan & Kivetz, 2008; Kivetz & Keinan, 2006) suggests he is on the right track. Other research, (Idson, Liberman, & Higgins, 2004; Leder et al., 2013; MacInnis & Patrick, 2006) however, indicates that there might be a moderating effect of a person’s inherent motivation to act conservatively and preserve the status quo while avoiding negative consequences or loss, which could interfere with the effectiveness of a temporal manipulation (e.g. Barney’s well-planned attempt). The current study thus aims at replicating past results and introducing chronic regulatory focus into the model as a potentially influential factor.

Self-Control Research

Considering people spend enormous amounts of money each year on unplanned purchases, which is nicely illustrated by the $59.1 billion spent within just one day, Black
Friday, in the US in 2012 (Harris, 2013), the relevance of understanding self-control in consumer research becomes obvious. Self-control is activated in any situation of choice, during which one or more attractive options have to be sacrificed towards another one (see for example Ainslie, 1975). Untangling various self-control mechanisms, their effects and prerequisites is therefore not only highly important for counteracting overspending and debt, but also for creating well suited marketing plans (see for example Wertenbroch, 1998).

Thus, self-control has been a recurring topic in consumer research for decades (e.g. Baumeister, 2002; Hoch & Loewenstein, 1991) as well as in various other areas in psychology and economics (for an overview see Kivetz & Simonson, 2002). Yet, the self-control problem targeted in these traditional works, in this line of research, was a myopic one (i.e. consumers struggling to choose farsighted, reasonable options over shortsighted pleasurable temptations). Going in hand with this notion, the focus was put on people’s ability to overcome the temptation caused by a vice (e.g. splurging on luxurious goods) in favor of a seemingly more reasonable virtue (e.g. a reasonably priced utilitarian alternative) (Kivetz & Simonson, 2002).

Only more recently, Kivetz and Simonson (2002) were the first to follow a different approach to self-regulation, in which they proposed an opposite idea of self-control. They suggest that sometimes people need to exercise self-control in order to allow themselves to indulge, when their default choice would be to act reasonably, yet their global desire is one for indulgence (i.e. the hyperopic self-control problem). In a series of six studies they provide evidence for their proposition showing people take steps to pre-commit to indulgence, if they are aware of their usual struggle to splurge. Their research thus presents a diversified approach to self-control research, adding a new perspective to the field.
Self-Control and Anticipated Regret

Regret is an important emotion within the study of choice and has already been investigated and shown relevant in post decisional stages for decades (see for example Festinger & Walster, 1964; Walster & Walster, 1970). Since then, different aspects of regret and its intensity have been explored, such as the strength of regret caused by errors of action vs. inaction (see for example Gilovich & Medvec, 1995; Zeelenberg, van Dijk, & Manstead, 1998). In this regard, studies have shown that regret of actions (i.e. things we wish we hadn’t done) is more intense in the short run and decreases with time, whereas regret of inactions (i.e. things we wish we had done) seems to increase with a longer temporal distance.

Kahneman and Miller (1986) explored the severity of regret, in regard to whether the actions leading to the outcome were according to prevailing norms or not. In the context of their Norm Theory, the authors showed that abnormal actions lead to stronger emotional reactions than actions set in accordance with a prevailing norm. For example, actions contrary to the norm can lead to stronger regret than those according to norm.

Various studies across time have further pointed out the relevance of affective forecasting on self-regulatory behavior (for an overview see MacInnis & Patrick, 2006), thereby including anticipated regret as an important mechanism in self-control. Anticipating post-decisional regret in a pre-decisional stage can influence people’s purchase decisions (Simonson, 1992) as well as choices in insurance matters and relevant everyday situations (Hetts, Boninger, Armor, Gleicher, & Nathanson, 2000). It can lead to avoidance of risky behaviors (Josephs, Larrick, Steele, & Nisbett, 1992) and to an increased safety in sexual behavior (Richard, De Vries, & Van der Pligt, 1998). Yet, in line with the before mentioned tradition in self-control research, research of regret in consumer behavior has long been
focused on regret of indulgence (i.e. consumers’ expectations to experience regret after choosing a pleasurable alternative over a more reasonable one) (Kivetz & Keinan, 2006).

Based on Simonson and Kivetz’s (2002) proposition of the existence of two different types of self-control problems (myopic vs. hyperopic self-control problem), Kivetz and Keinan (2006) introduced this notion into research on self-control regrets. They conducted several studies referring to research on the effects of temporal distance on emotions, for example the temporally changing intensity of hot and cold emotions (for an overview see Gilovich et al., 1998). Kivetz and Keinan (2006) argue that depending on the prevalent feeling, different self-control behaviors (i.e. using self-control to act reasonably vs. using self control to allow oneself to indulge) can elicit different types of regrets (i.e. regrets of hyperopia vs. regrets of indulgence). This temporal effect shall be further explained in the next section.

The notion of different types of self-control regrets has since been more widely explored. Valenti, Libby and Eibach (2011), for example, found that imagery perspective (i.e. first person or third person perspective on considerations) can influence the degree to which regrets for actions or inactions prevail. This idea relates to the results of Gilovich & Medvec (1995) as presented before, showing that a narrower frame of mind (i.e. shorter temporal frame or first person perspective) goes in hand with regrets of action, whereas a broader frame of mind (longer time frame or third person perspective) leads to an increase in regrets of inaction. Leder et al. (2013) only recently conducted a set of experiments providing evidence for the occurrence of promotion and prevention regrets based on Regulatory Focus Theory (Higgins, 1997). Also this research will be portrayed in more detail in the following sections.
Temporal Effects On Anticipated Regrets

Kivetz and Keinan (2006) started to explore the effects of temporal distance on regret. They based their studies on two fundamental theories.

First of all, their research is predicated on the assumption of a hyperopic self-control problem, as introduced by Simonson and Kivetz (2002). They thereby refer to situations in which indulgence is expected to cause less long-term regret than righteousness. This assumption is to be met mainly in situations presenting self-control dilemmas: “everyday situations in which the optimal choice is not transparent” (Kivetz & Keinan, 2006, p. 274), not so much in those presenting self-control lapses: “situations in which consumers could clearly identify an optimal decision (i.e., choosing the farsighted option) but nevertheless transgress due to various factors that dominate the here and now (...)” (Kivetz & Keinan, 2006, p. 274). They thus focus on situations in which an optimal solution is hard to identify and can lead to this hyperopic type of self-control problem, in which people should later on feel more negatively about having asserted too much self-control rather than too little, thus depriving themselves of valuable positive experiences.

Secondly, they assumed two emotions to be relevant for effects of temporal distance on regret: indulgence guilt and the feeling of missing out. They expected indulgence guilt to prevail when vice was chosen over virtue (myopic self-control problem), missing out on the other hand when virtue was chosen over vice (hyperopic self-control problem). As they considered indulgence guilt to be an intense, short-lived emotion (for an overview over the theory on hot and cold emotions refer to Gilovich et al., 1998; Kahneman, 1995), the feeling of missing out, on the other hand, to be long-lived and slowly increasing, they expected indulgence guilt to prevail short-term, but missing out long-term.
Thus they suggested a near-future temporal focus to lead to more regret of indulgence (regret of myopia), a distant-future temporal focus on the other hand to increase regret of righteousness (regret of hyperopia).

In a set of three studies, Kivetz and Keinan (2006) provided empirical evidence for the predicted temporal effect on (anticipated) regret as well as for the proposed role of indulgence guilt and the feeling of missing out.

In a later, second set of five studies (Keinan & Kivetz, 2008), they applied the same principle to the behavioral consequences of (anticipated) regret, expecting that an induced distant-future focus in anticipated regret would lead to more indulgence compared to a near-future focus or a control group; both of them leaning towards righteousness. They therein expected no effects of a near-future manipulation compared to a control group, as they assumed people would naturally accept a narrow, hyperopic perspective in self-control dilemmas.

In one of these studies they used a sample of 122 students, whom they invited to the laboratory to take part in an experiment. The participants were going to be presented with a real self-control dilemma, in the form of a choice of participating in either one of two lottery draws, one of those yielding a utilitarian price, the other one an indulgence price. Before presenting them with their task, the experimenters randomly assigned the participants to four experimental groups. In the three regret conditions, participants should estimate their regret for potential participation in each of the draws respectively, according to a certain time frame: In the distant-future experimental group, participants were to anticipate their regret ten years from then. In the near-future experimental group they should anticipate their regret in one day. They further included an unspecified-future-time group, in which participants should anticipate their regret at an unspecified time in the future, and a control group, who
did not have to anticipate regret at all. At the beginning of the experiment, participants were presented with the two prices; the utilitarian price being a $30 drugstore voucher and the indulgence price being a one-year subscription towards a local entertainment magazine. While the description of the utilitarian price was kept very basic, with just a logo, the presentation of the indulgence price included more emotional descriptions.

Participants in the three regret conditions further had to predict the choice of which of the prices they thought they would regret more in the allocated time frame. After they had made their choice, they selected a receipt for either one of the draws. The control group did not answer any questions before choosing their price. After the choice, participants in the three regret conditions should further imagine just having chosen the hedonic price and then provide ratings on the intensity of guilt they would feel according to the time frame of their experimental group (ten years from now/in one day/at an unspecified future time). Accordingly they imagined just having chosen the utilitarian price, and rated how much they would have feelings of missing out in ten years/in one day/at an unspecified future time. Again, participants in the control condition did not answer any further questions. Their results provided evidence for all of the assumptions described above, finding that indeed participants in the distant-future condition chose the hedonic price significantly more often than participants in either of the other groups. Keinan and Kivetz (2008) could also show that indeed feelings of indulgence guilt seemed to be significantly decreasing for the distant-future condition, whereas feelings of missing out showed a tendency to rather grow stronger for the distant-future group, compared to the other conditions.

In four more studies, they provided further empirical evidence for the above mentioned results in various contexts: decisions between leisure and work, a real-life shopping situation as well as money spent on shopping during thanksgiving holidays.
Further, this set of studies reinforced earlier results on the important role that indulgence guilt and the feeling of missing out play in this phenomenon.

**Regulatory Focus and Anticipated Regret**

Even though the results found by Keinan and Kivetz (2008) are very pronounced, they seem surprising when taking into account previous findings. Especially the assumption of a universal hyperopic self-control problem still contradicts the classic self-control research, which to date has provided plenty of evidence for a relevant prevalence of the myopic self-control problem, as discussed above. These inconsistencies in the findings in self-control research across time raise the question of whether the effects found by Keinan and Kivetz (2008) are indeed universal across people, or if there might be personality variables leading to the effect being more/less pronounced. One potential concept that comes into mind in this context is some people’s tendency to act conservatively in order to protect the status quo, versus others’ willingness to take a risk for fulfillment of their wishes and ideals. People with a strong desire to keep the status quo upright might be more scared to lose what they already have, and thus be naturally more self-controlled and prone to the hyperopic self-control problem and according effects, like the temporal effects found by Keinan and Kivetz (2008).

An according concept can be found in Higgins’ (1997) Regulatory Focus Theory, which has recently grown more influential in regret research. It states that there are two distinct motivational orientations that underlie people’s self-regulatory processes: promotion and prevention focus. Individuals with a (chronic) promotion focus strive for positive outcomes, try to realize ideal goals and apply eager strategies, whereas people with a (chronic) prevention focus avoid negative outcomes, try to fulfill ought goals and lean towards vigilant strategies.
Regulatory Focus Theory does not only seem to be important in general self-control research, however. There have been several findings across research on counterfactual thinking (i.e. producing ideas and assumptions of alternatives to actual consequences and events; thinking about “what might have been”), pointing towards a significant influence of regulatory focus in this context. Rose, Hur, and Pennington (1999) found a moderating effect of regulatory focus on the type of counterfactual thoughts produced. In three experiments they show, for example, that prevention focus goes in hand with subtractive counterfactuals (e.g. “If only I hadn’t taken that action,…”), whereas promotion focus goes in hand with additive counterfactuals (e.g. “If only I had taken that action,…”).

Further, based on results found by Idson et al. (2004), MacInnis and Patrick (2006) consider regulatory focus a potentially influential factor in their conceptualization of the role of affective forecasting (i.e. anticipation of affect caused by certain events/decisions) in behavioral regulation. Idson et al. (2004) demonstrated that considering negative future outcomes fits prevention-focused people better than promotion focused people (i.e. anticipated positive outcomes weigh stronger for promotion-focused individuals, whereas anticipated negative outcomes weigh stronger for prevention-focused individuals). MacInnis and Patrick (2006) thus suggest that regulatory focus influences emotional responses to control and control failure. Prevention oriented people should be more receptive to negative emotions than promotion oriented people, for whom positive emotions should weigh more heavily. Prevention oriented people should, thus, choose a different approach to resolving behavioral conflicts than promotion oriented people, based on the prevalence of the respective emotions in the affective forecasts (MacInnis & Patrick, 2006).

These results foster the assumption that - due to their basic affinity for negative counterfactuals, as well as their natural tendency for preservation of an acceptable status quo
- prevention-oriented individuals might be more susceptible to hyperopia (i.e. excessive self-control) as well as a feeling of guilt and thus the temporal variations in anticipated regret, as suggested by Keinan and Kivetz (2008).

Even more recently, Leder et al. (2013) conducted a series of studies on the influence of regulatory focus on anticipated regret and its consequences. They found that the anticipation of a bad outcome itself is not necessarily more painful for prevention-focused individuals than for promotion-focused people. Instead their results provide evidence for their proposition that different types of regrets might be relevant for promotion-focused individuals rather than prevention-focused individuals.

In five studies, Leder and colleagues (2013) found that the type of regrets traditionally considered in research on anticipated regret seems to be a prevention-relevant one. This type of regret is characterized by uncertainty and ruminating about decisions. It is connected to potential negative outcomes and failing to fulfill ought-goals. Promotion-relevant regrets, on the other hand, seem to be focused on missed positive outcomes and unfulfilled ideal-goals. When analyzing the wording of regrets produced by participants, they further found that regrets mentioned in a promotion-focused context tended to be more long-term and abstract, whereas prevention-focused regrets related to the more immediate future. The two types of regrets further showed different effects on behavioral regulation, with promotion related regrets leading to more risk-seeking behavior and prevention regrets leading to more risk-avoidance.

Research Question

Considering the idea that – as discussed above – prevention focused individuals should naturally be more prone to a hyperopic self-control problem than promotion focused individuals and taking into account Leder et al.’s (2013) findings that promotion oriented
individuals inherently entertain a mindset in which a feeling of missing out (“missing of positive outcomes”) is generally more prevalent than for prevention focused individuals, for whom guilt seems to be more central (MacInnis & Patrick, 2006; Idson et al., 2004), which according to Keinan and Kivetz (2008) are the two central emotions in the mechanism, it seems reasonable to expect inter-individual differences in susceptibility to the effects of temporal distance of anticipated regret on behavior, depending on the prevailing regulatory focus.

I am thus going to examine if chronic regulatory focus displays moderating qualities for the relation of temporal distance in anticipated regret and the tendency to indulge, in terms of a distant-future time-frame leading to more hedonic choices, or higher perceived attractiveness of a hedonic over a utilitarian alternative.

**Hypotheses**

The current study aims to first replicate the results found by Keinan and Kivetz (2008) leading to the following hypotheses:

**H1:** Longer temporal distance of anticipated regret leads to significantly more choices of the hedonic price (vouchers for concert tickets) over the utilitarian price (drugstore vouchers) compared to the other temporal conditions.

**H1a:** People in the distant-future regret condition choose the hedonic price (vouchers for concert ticket) over the utilitarian price (drugstore vouchers) significantly more often than people in the control condition.

**H1b:** People in the distant-future regret condition choose the hedonic price (vouchers for concert ticket) over the utilitarian price (drugstore vouchers) significantly more often than people in the near-future regret condition.
I further expect that a similar manipulation of temporal distance of anticipated regret would not show the same effect in promotion-focused and prevention-focused individuals. With promotion-focused people expected to naturally produce regrets circling around missing positive opportunities, it seems reasonable to expect a distant-future manipulation meant to put this aspect into focus to be less effective for those individuals than for people naturally leaning towards a prevention focus.

For prevention focused individuals however, the effect of increased indulgence under a condition of anticipated distant-future regret is indeed expected to show, as they, according to Leder et al. (2013), naturally tend to focus more on near-future regrets and are, as mentioned above, supposed to be more susceptible to a feeling of guilt (MacInnis & Patrick, 2006), therefore being consistent with hyperopia-assumption (i.e. the assumption of people naturally leaning towards a narrow focus) underlying Keinan and Kivetz’s (2008) conceptions.

Finally MacInnis & Patrick’s (2006) suggestion of people with prevention-focus being more receptive for negative emotions (e.g. guilt, deprivation) supports the considerations presented above, which shall be tested in the following study. I therefore expect that:

H2: There is a significant moderation effect of regulatory focus on the effect of temporal distance of anticipated regret on choice of a hedonic over a utilitarian price. Individuals with a prevailing prevention focus show a significantly greater tendency towards choosing the hedonic over the utilitarian price in the distant-future compared to the near-future manipulation. This effect is less distinct for individuals with a prevailing promotion focus.
I further want to generalize these assumptions not only to choice of prices, but also to their attractiveness ratings in order to introduce another dependent variable with a greater potential for differentiation. This leads me to following, additional hypotheses:

**H3**: Longer temporal distance of anticipated regret leads to a significant shift in attractiveness towards the hedonic price (over the utilitarian price) compared to the other temporal conditions.

**H3a**: People in the distant-future regret condition rate the hedonic price (vouchers for concert ticket) as significantly more attractive (indicated by lower continuous attractiveness scores) compared to the utilitarian price (drugstore vouchers) than people in the control condition.

**H3b**: People in the distant-future regret condition rate the hedonic price (vouchers for concert ticket) as significantly more attractive (indicated by lower continuous attractiveness scores) compared to the utilitarian price (drugstore vouchers) than people in the near-future regret condition.

**H4**: Individuals with a stronger prevention focus show a significant difference in attractiveness-ratings between distant-future and near-future manipulation, with individuals in the near-future group tending to lean towards the utilitarian price compared to individuals in the distant-future group. This effect is less distinct for individuals with a prevailing promotion focus.

**Method**

In order to test these hypotheses, I referred to the study conducted by Keinan and Kivetz (2008), as described in detail above. The study used a lottery draw to examine the effect of temporal variations in anticipated regret on „real“ choices. I adapted this experiment
into an online experiment, using a similar setting and similar prices to those used in the previous experiment. Further chronic regulatory focus was assessed, as described below.

**Participants and Design**

I recruited 145 participants for my online study, out of which I had to exclude 64 for reasons such as: unfinished participation, repeated participation or lack of motivation obvious in the answering pattern. This left me with a sample of eighty-one Austrian participants (50 women, 31 men) aged 17 to 60 ($M = 30.62$; $SD = 12.3$). Out of all participants 42% worked in a full-time job, 18.5% worked a part-time job and 39.5% worked less than that or not at all. Also 42% out of the participants were students, however, only 6.2% of all participants were psychologists or psychology students. I also recruited a second sample of psychology students who participated in the experiment in the laboratory. Unfortunately, I had to exclude this second sample due to inconsistencies in the data, which led me to believe in a lack of motivation and concentration of the participants.

The general procedure of the study followed the one presented by Keinan and Kivetz (2008). After an introduction, I first presented two lottery draws to the participants, featuring a utilitarian and a hedonic price respectively; one of which they would later be allowed to participate in. The two prices were presented alternating the side each price appeared on. I then randomly assigned the participants to the same three experimental conditions, as used in the original experiment, and one control condition. The three experimental groups should further estimate which decision they would regret more in one day (Condition 1), ten years from now (Condition 2) or at an unspecified time in the future (Condition 3). The control group (Condition 4) did not answer any regret related questions.

Participants then chose their preferred price and rated the attractiveness of both prices on a continuous scale. Next I asked them to assume having chosen the hedonic price and to
estimate how much guilt they would feel in one day / ten years from now / at an unspecified time in the future respectively. Vice versa I asked the participants to assume that they had chosen the utilitarian price and then estimated how much they would have a feeling of missing out at a specific time in the future, according to manipulation. Participants in the control condition did not have to answer these questions; all other participants answered both of them, irrespective of their actual choice. Afterwards, I assessed chronic regulatory focus and finally the participants provided some demographic data. I further tested for transparency of the experiment, before I thanked and debriefed the participants.

Materials

**Prices.** As prices I used a drug store voucher (i.e. utilitarian price) and a concert ticket voucher (i.e. hedonic price). The latter differed from the entertainment magazine subscription used in the original study, as I planned to eliminate potential unintended temporal effects caused by the one-year subscription as opposed to a one-off drug store voucher. Both prices used in the current study were thus single-use vouchers with an equal time frame for use of one year. Presentation formats for the two prices were also based on the original experiment, with the hedonic price featuring emotional pictures and an affective slogan, whereas the utilitarian price only contained the logo of the drug-store chain as well as the original slogan of the company (Figure 1).
I conducted a pretest to assess attractiveness, hedonism-ratings and utilitarianism-ratings for each of the prices. I collected data from sixteen participants (9 women, 7 men) online and presented them with the prices which should be judged in pairs and separately. Participants first had to choose between the two prices and should then provide ratings for hedonistic and utilitarian qualities of each price, as well as their attractiveness. To determine these properties, participants rated each of the prices on three to five items for each concept in form of a semantic differential (for a full list of items, see appendix). The results showed that attractiveness ratings for the concert ticket voucher \((M = 5.63, SD = 1.07)\) did not significantly differ from those for the drug store voucher \((M = 4.99, SD = .76)\) \((t(15) = 2.036, p = .06)\). The utilitarianism ratings for the drug store voucher \((M = 5.96, SD = 1.17)\) were significantly higher \((t(15)=-4.304, p = .001)\) than those for the concert ticket voucher \((M = 3.73; SD = 1.34)\); the hedonism ratings on the other hand were significantly higher \((t(15)=4.012, p = .001)\) for the concert ticket voucher \((M = 5.98, SD = 1.13)\) than the drug store voucher \((M = 4.48, SD = 1.03)\).

**Manipulation of temporal perspective.** In order to manipulate temporal perspective, participants in the three experimental conditions had to estimate the participation in which of the two draws would cause them more regret in one day / ten years from now / at an
unspecified time in the future. They indicated their anticipated regret on a seven-point scale ranging from 1 (= hedonic price; i.e. concert ticket voucher) to 7 (= utilitarian price; i.e. drug store voucher). Participants in the control condition did not answer this question.

**Choice and Attractiveness.** Participants made their actual choice of prices in dichotomous scheme, later on coded with 1 (= hedonic price; concert ticket voucher) and 2 (= utilitarian price; drug store voucher). They further rated attractiveness on a one-item eleven-point likert scale ranging from -5 (= hedonic price more attractive) to 5 (= utilitarian price more attractive) (M = .36, SD = 3.551). I used z-standardized attractiveness scores for all further analyses.

**Guilt and Missing Out.** I further asked for ratings of guilt and missing out in the same manner as the original study (Keinan & Kivetz, 2008). I first asked participants to imagine just having chosen the hedonic price and to rate how much guilt they would feel (1= no guilt at all; 7= very strong feelings of guilt) (M = 1.88, SD = 1.541). I then asked them to imagine just having chosen the utilitarian price and then to provide ratings of how much they would have a feeling of having missed out (1= no feeling of missing out at all; 7= very strong feelings of missing out) (M = 2.32, SD = 1.90).

**Regulatory Focus.** Chronic regulatory focus was assessed with the Regulatory Focus Questionnaire (RFQ) (Higgins et al., 2001), consisting of eleven items measuring chronic promotion and prevention focus respectively on a five-point scale. A full list of the German items used can be found in the appendix of this work. Both scales of the Regulatory Focus Questionnaire (Higgins et al., 2001) showed satisfying reliabilities of α = .76 for the promotion-focus scale and α = .77 for the prevention-focus scale. The two parts were then combined by subtraction into one scale ranging from prevailing promotion-focus (low values)
to prevailing prevention-focus (high values) (M = -.47, SD = 1.086). Further I z-standardized this continuous variable.

**Results**

**Choice**

In order to determine the influence of the time-manipulation on the price choice made in the drawing, I calculated a forced entry logistic regression, in which I included the two relevant experimental groups (anticipated regret in one day/near-future experimental group, anticipated regret in ten years/distant-future experimental group) as well as the control group as covariates and the choice (hedonic vs. utilitarian price) as dependent variable. In line with Hypothesis 1, the results show that the manipulation overall has significant predictive quality (Manipulation $\chi^2 (2, N = 61) = 5.297, p = .036$ (1-tailed)). I further found that only the effect in the distant-future manipulation group significantly differs from the average experimental effect (Distant-future group $\beta = -.784, \chi^2 (1, N = 61) = 4.426, p = .018$ (1-tailed)), with this experimental condition significantly predicting more hedonic choice, which further supports Hypothesis 1.

To look at Hypothesis 1a and 1b, I conducted two separate logistic regressions, including either the distant-future manipulation group and the control group or the distant-future manipulation and near-future manipulation group respectively. It shows that there is a significant effect of the distant-future manipulation group compared to the control group (Manipulation $\beta = -.765, \chi^2 (1, N = 43) = 5.202, p = .012$ (1-tailed)), supporting Hypothesis 1a. However, I did not find a significant effect of the two experimental groups (anticipated regret in one day/near-future experimental group versus anticipated regret in ten years/
distant-future experimental group) (Manipulation $\beta = -0.820$, $\chi^2 (1, N = 40) = 1.593$, $p = .104$ (1-tailed)), thus not being able to accept Hypothesis 1b.

To extend the findings mentioned above, I further conducted the same analyses including the last experimental condition (anticipation of regret at an unspecified time in the future). Significance of the results did not change. Another overall logistic regression replicated the significant effects of the temporal manipulation as independent predictor (Manipulation $\chi^2 (3, N = 81) = 7.003$, $p = .0355$ (1-tailed)). Again the distant-future regret group was the only one showing significant deviation from the average effect (Distant-future group $\beta = -0.954$, $\chi^2 (1, N = 81) = 5.934$, $p = .008$ (1-tailed)). When Bonferroni corrected significant results stayed significant. For tables including all relevant data of these analyses, refer to the appendix, Table 4.

As can be seen from Figure 2 the distant-future manipulated group was also the only experimental group with more than 50% of the participants choosing the hedonic option.

![Figure 2](image)

*Figure 2.* People choosing hedonic price over utilitarian price by manipulation in percent.
In a second step, I tested for the hypothesized moderation effects of regulatory focus, relating to Hypothesis 2. I therefore conducted another logistic regression with the two relevant experimental conditions, (near-future experimental group, distant-future experimental group) as well as the control group, and introduced regulatory focus (in the form of the standardized, continuous promotion-prevention variable) as a second covariate. Results again show a significant main effect of manipulation (Manipulation $\chi^2 (2, N = 61) = 4.954, p = .042$ (1-tailed)) and the main effect of regulatory focus approaches significance (Regulatory Focus $\chi^2 (1, N = 61) = 2.621, p = .0525$ (1-tailed)). Interaction effects did not reach significance (Interaction Manipulation x Regulatory Focus $\chi^2 (2, N = 61) = 2.627, p = .1345$ (1-tailed)) therefore Hypothesis 2 could not be accepted.

Again, I further conducted the same analysis including the last experimental group (regret at an unspecified time in the future). When including the unspecified future time group, significance of the main effect of the manipulation is reduced (Manipulation $\chi^2 (3, N = 81) = 5.875, p = .059$ (1-tailed)). Significance of the main effect of regulatory focus on the other hand is enhanced ((Regulatory Focus $\chi^2 (1, N = 81) = 4.710, p = .0015$ (1-tailed)). Interaction effects still do not reach significance (Interaction Manipulation x Regulatory Focus $\chi^2 (3, N = 81) = 3.581, p = .155$ (1-tailed)). For tables including all relevant data of these analyses, refer to the appendix, Table 5.

**Attractiveness**

For the testing of Hypothesis 3 and Hypothesis 4, I used the z-standardized attractiveness ratings. I conducted a one-way ANOVA ($F(2, 60) = 2.29, p = .111$) with a weighted contrast comparing attractiveness ratings of the distant-future condition (anticipated regret ten years from now) to those of the other relevant conditions (i.e. near-future condition and control group). The weighted model (see Table 1) shows significant results (Contrast
\( t(58) = -2.138, p = .019 \) (1-tailed), reaffirming the main effect of the temporal manipulation of anticipated regret, with the distant-future group deviating from the other conditions, as could be seen before. Hypothesis 3 can thus be accepted. Analyses of single planned contrasts showed that attractiveness scores of the distant-future group (\( M = -1.273, SD = 3.693 \)) are significantly lower (leaning towards the hedonic price) than those in the control condition (\( M = .714, SD = 3.117; t(58) = 1.824, p = .036 \) (1-tailed)) and the near-future condition (\( M = .778, SD = 3.797; t(58) = 1.841, p = .037 \) (1-tailed)), thus affirming Hypotheses 3a and 3b.

Table 1.

*Model Summaries for Planned Contrasts of Experimental Groups on Attraction*

<table>
<thead>
<tr>
<th>Planned contrasts excluding unspecified future time experimental group</th>
<th>Value of Contrast</th>
<th>SE</th>
<th>T</th>
<th>df</th>
<th>( p ) (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIF vs. NEF and CG (hypothesis 2)</td>
<td>-1.137</td>
<td>0.532</td>
<td>-2.138</td>
<td>58</td>
<td>.019</td>
</tr>
<tr>
<td>DIF vs. CG (hypothesis 2a)</td>
<td>0.560</td>
<td>0.304</td>
<td>1.841</td>
<td>58</td>
<td>.036</td>
</tr>
<tr>
<td>DIF vs. NEF (hypothesis 2b)</td>
<td>0.577</td>
<td>0.317</td>
<td>1.824</td>
<td>58</td>
<td>.037</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planned contrasts including unspecified future time experimental group</th>
<th>Value of Contrast</th>
<th>SE</th>
<th>T</th>
<th>df</th>
<th>( p ) (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIF vs. NEF, UT and CG</td>
<td>1.890</td>
<td>0.731</td>
<td>2.585</td>
<td>77</td>
<td>.006</td>
</tr>
<tr>
<td>DIF vs. CG</td>
<td>0.560</td>
<td>0.297</td>
<td>1.882</td>
<td>77</td>
<td>.032</td>
</tr>
<tr>
<td>DIF vs. NEF</td>
<td>0.577</td>
<td>0.310</td>
<td>1.864</td>
<td>77</td>
<td>.033</td>
</tr>
</tbody>
</table>

*Note.* NEF = near-future experimental group; DIF = distant-future experimental group; UT = unspecified future time experimental group; CG = control group

Again, I further conducted the same analyses including the unspecified time in the future group. Also in this set of analyses the weighted one-way ANOVA (Contrast \( t(77) = -2.585, p = .006 \) (1-tailed)), as well as single comparisons between the distant-future condition and the control group (\( t(77) = 1.882, p = .032 \) (1-tailed)), the near-future condition (\( t(77) = 1.864, p = .033 \) (1-tailed)), as well as the unspecified time in the future condition (\( M = 1.4, SD = 3.218; t(77) = 2.499, p = .008 \) (1-tailed)) showed significance.
As can be seen in Figure 3, again the distant-future group was the only one in which attractiveness ratings leaned towards the hedonic price.

![Figure 3. Attractiveness ratings of hedonic price vs. utilitarian price by manipulation.](image)

For the testing of Hypothesis 4, I used the same attractiveness scale as before. To test for the moderating influence of regulatory focus on the effect of temporal manipulation of anticipated regret on attractiveness ratings, I calculated a general linear model (GLM; see Table 2). I included attractiveness as the dependent and experimental group as well as the standardized continuous regulatory focus variable as independent factors. The adapted model overall reaches significance (Model $F(5,61) = 2.632, p = 0.33$) with non-significant main effects (Manipulation $F(2,61) = 2.049, p = .139$; Focus $F(1,61) = .150, p = .150$), but the moderation effect showing and approaching significance (Interaction $F(2,61) = 3.057, p = .055$), thus supporting Hypothesis 4.
Table 2.  

*General Linear Model Summaries for Attraction Based on Experimental Group and Regulatory Focus*

<table>
<thead>
<tr>
<th>General linear model excluding unspecified future time experimental group</th>
<th>Variable</th>
<th>df1, df2</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>5, 61</td>
<td>2.632</td>
<td>.033</td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>2, 61</td>
<td>2.049</td>
<td>.139</td>
<td></td>
</tr>
<tr>
<td>Regulatory focus</td>
<td>1, 61</td>
<td>2.136</td>
<td>.150</td>
<td></td>
</tr>
<tr>
<td>Experimental group x regulatory focus</td>
<td>2, 61</td>
<td>3.057</td>
<td>.055</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General linear model including unspecified future time experimental group</th>
<th>Variable</th>
<th>df1, df2</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>7, 81</td>
<td>2.476</td>
<td>.024</td>
<td></td>
</tr>
<tr>
<td>Experimental group</td>
<td>3, 81</td>
<td>1.965</td>
<td>.127</td>
<td></td>
</tr>
<tr>
<td>Regulatory focus</td>
<td>1, 81</td>
<td>3.408</td>
<td>.069</td>
<td></td>
</tr>
<tr>
<td>Experimental group x regulatory focus</td>
<td>3, 81</td>
<td>2.160</td>
<td>.100</td>
<td></td>
</tr>
</tbody>
</table>

As Field (2012) suggests not to solely look at significance, as this could cloud effects in case of small sample sizes, I also calculated the effect size for the interaction effect (\(\eta^2 = .3\)), presenting a medium sized effect (Bortz & Döring, 2006, p. 606).

In a second step, I conducted a split for rather promotion- versus rather prevention-oriented people; separating them according to scores, with people with a prevailing promotion focus (i.e. scoring below 0 on the non-standardized continuous regulatory focus variable) being coded 1 (=promotion focused) and people with a prevailing prevention focus (scoring above 0 on the non-standardized continuous regulatory focus variable) being coded 2 (=prevention focused). This split lead to two split-groups of n= 34 in the promotion-oriented group and n=26 in the prevention-oriented group. I then conducted a separate one-way ANOVA with weighted contrasts (see Table 3) for each of the split-groups (promotion vs. prevention focus). These analyses show significant effects only in the prevention-oriented group (Contrast \(t(19) = -2.285, p = .017\) (1-tailed)) not, however, in the promotion-oriented group (Contrast \(t(36) = -.982, p = .167\) (1-tailed)), providing further support for Hypothesis 4.
Table 3.

Model Summaries for Planned Contrasts of Experimental Groups on Attraction Split by Regulatory Focus

<table>
<thead>
<tr>
<th>Planned contrasts - distant-future experimental group vs. overall effect excluding unspecified future time experimental group</th>
<th>Value of Contrast</th>
<th>SE</th>
<th>T</th>
<th>df</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention focus</td>
<td>-1.907</td>
<td>0.834</td>
<td>-2.285</td>
<td>19</td>
<td>.017</td>
</tr>
<tr>
<td>Promotion focus</td>
<td>-0.662</td>
<td>0.674</td>
<td>-0.982</td>
<td>36</td>
<td>.167</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planned contrasts - distant-future experimental group vs. overall effect including unspecified future time experimental group</th>
<th>Value of Contrast</th>
<th>SE</th>
<th>T</th>
<th>df</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention focus</td>
<td>3.116</td>
<td>1.132</td>
<td>2.751</td>
<td>29</td>
<td>.005</td>
</tr>
<tr>
<td>Promotion focus</td>
<td>0.982</td>
<td>0.942</td>
<td>1.042</td>
<td>44</td>
<td>.152</td>
</tr>
</tbody>
</table>

Finally, I also conducted t-tests comparing price-attractiveness in the distant-future and near-future group for each regulatory focus split-group respectively (see Figure 4). These t-tests reveal no significant differences between the near-future experimental group ($M = -.25$, $SD = 3.888$) and the distant-future experimental group ($M = -.69$, $SD = 3.794$) for promotion-focused individuals ($t(23) = .288$, $p = .776$), they do provide significant results for the prevention-focused group though ($t(13) = 2.821$, $p = .007$ (1-tailed)), with individuals in the distant-future manipulation having significantly lower means ($M = 2.11$, $SD = 2.858$) (indicating a hedonic tendency) compared to individuals in the near-future manipulation ($M = 2.83$, $SD = 3.586$), thus providing more support for Hypothesis 4.

Again, I additionally calculated another GLM as well as the weighted one-way ANOVAs for the split-groups, according to regulatory focus, including the “unspecified time in the future” group, leading to similar results, as presented in Table 2 and Table 3.
Exploratory Analysis

In order to explore whether these trends can be explained by a discrepancy in the prevalence of anticipated guilt and/or the anticipated feeling of missing out according to regulatory focus, I conducted an exploratory analysis. I conducted t-tests, separately for the distant-future and near-future experimental groups, using the promotion- / prevention-focus split-variable as independent and “feeling of missing out” as dependent variable. Indeed the analysis showed a significant difference ($t(15.7) = 2.983, p = .009$) of means in “missing out” between prevention- and promotion-focused individuals in the near-future manipulation, with the promotion-oriented group showing higher intensities of a feeling of missing out ($M = 2.33, SD = 2.015$) than the prevention-oriented group ($M = 0.33, SD = .817$). This significance disappeared ($t(20) = .578, p = .570$) in the distant-future condition, as the rating of “missing out” increased in the prevention-focused group ($M = 1.44, SD = 2.186$). There

Figure 4. Attractiveness ratings of hedonic price vs. utilitarian price by manipulation and regulatory focus (split according to prevailing promotion vs. prevailing prevention focus).
was no significant difference in guilt in either condition (Distant-future $t(14.13) = 2.122, p = .052$; Near-future $t(16) = 0.202, p = .842$), though (see Figure 5).

I further found that strongly promotion-oriented people showed a general predominance of a feeling of missing out over guilt ($t(47) = -2.653, p = .011$; see Figure 6). Also when Bonferroni-correction was applied for repeated testing of the same sample, significant results stayed the same.
Discussion

In a first step in my analysis, I could replicate the general findings of Keinan and Kivetz (2008). In a binary logistic regression I found that temporal manipulation of anticipated regret (i.e. asking people to estimate how much they would regret their decision in one day vs. ten years) acted as a significant predictor of choice between a hedonic vs. utilitarian price in a lottery draw. People in the distant-future experimental condition (i.e. estimating their regret in ten years) chose the hedonic price significantly more often compared to the other conditions (i.e. near-future experimental condition and control condition). In separate comparisons I also found that, specifically when considering the control group opposed to the distant-future experimental group, manipulation had a significant predictive influence. This is not the case when only considering the two experimental conditions (i.e. distant-future condition vs. near-future condition). When looking at the results in detail, there is a trend into the right direction, with people in the near-
future condition choosing the hedonic price less often than those in the distant-future condition, yet the effect did not reach significance, which could also be due to the comparatively small sample size.

When I considered attractiveness ratings instead of the actual choice of people, thus differentiating a bit more as the scale used for attractiveness ratings was an eleven-point likert-scale, whereas choice was made in a binary format, I found similar results, except all of the effects reached significance. Again I found that experimental groups showed a significant effect on attractiveness ratings, with people in the distant-future condition giving significantly better ratings for the hedonic price than all other groups. Also in separate comparisons I found that ratings in the distant-future experimental group significantly differed from those in the near-future group as well as those in the control group, with the distant-future experimental group always leaning more towards the hedonic option than the others. I could thus replicate the general tendency proposed and found by Keinan and Kivetz (2008).

When using regulatory focus as a moderator in another binary logistic regression on choice, I did not find any significant interaction effects. The absence of this effect might be due to the small sample size in combination with the only binary appearance of the dependent variable in this case. When I calculated a general linear model using attractiveness ratings instead of choice as dependent variable however, the moderation effect of regulatory focus showed. I then split my sample into two groups, one with prevailing prevention focus, the other one with prevailing promotion focus and calculated separate weighted contrasts for each of those groups. As assumed, the expected significant effects of temporal manipulation on attractiveness ratings only showed in the prevention focused group, not so in the promotion focused group. These results provide strong support for my hypothesis, that effects
of temporal manipulation of anticipated regret are more pronounced for a certain group of people (i.e. prevention focused people) than for others (i.e. promotion focused people). These findings also go in hand with previous research showing that promotion oriented individuals are more likely to rely on internal cues and implicit preferences than prevention oriented people (see for example Florack, Friese, & Scarabis, 2010).

**Feelings of Guilt and Missing Out**

As my exploratory analysis revealed, there seems to be a difference in prevailing feelings depending on chronic regulatory focus. In the distant-future condition I found a general trend towards a dominating feeling of missing out, regardless of the inherent regulatory focus. These findings are in accordance with the tendencies found by Keinan and Kivetz (2008). Yet, for promotion-focused people the feeling of missing out seems to already dominate in the near-future condition, which again is in line with Leder et al.’s (2013) proposition of a specific promotion type of regret, which focuses on missed opportunities rather than other negative emotions.

It thus seems that promotion-focused people indeed generally produce regrets revolving around a feeling of missing out, leading them to indulgence, whereas prevention-focused people seem to need a “nudge” in the form of a broader picture (e.g. a longer temporal perspective) in order to produce this type of regret and give in to according indulgent behavior.

My results thus support Keinan and Kivetz’s (2008) assumption of feeling of missing out and guilt as a driving force in the concept of behavioral influential temporal differences in anticipated regret on the one hand. On the other hand, they also supply evidence for Leder et al.’s (2013) suggestion of the existence of two different types of regret; a prevention focused
one, related to insecurities and ruminating and a promotion focused one, connected to feelings of missed opportunities.

**Relevance and Practical Implications**

The current research adds to the understanding of interpersonal factors influencing the effect of anticipated regret and, to my knowledge, is the first study to integrate regulatory focus as well as temporal effects in anticipated regret into one analysis. It thereby tries to connect previous approaches to the subject and also outlines possibilities for further research, which shall be addressed in more detail in the next section.

Further already Keinan and Kivetz (2008) pointed out the relevance of anticipated regret in marketing, with more and more companies using the concept for their campaigns (for examples refer to Keinan & Kivetz, 2008). The current study however indicates that anticipated regret cannot be expected to have the same effect on all customers. It is thus relevant to consider regulatory orientation and its consequences before implementing a campaign relying on the effect of anticipated regret.

As prevention oriented people seem to need a temporal „nudge“ in order to indulge, I would thus recommend to focus on distant-future regrets when trying to sell a luxury/hedonic product to an unspecified group of people (e.g. showing an old couple thinking back to a holiday versus a new dishwasher, with the slogan „What would you regret more fifty years from now?“). If the product that is to be promoted on the other hand is a product that requires short-term marketing (e.g. an offer that is on for limited time only) it might be worth inducing a promotion focus in the consumer, for example by making them imagine their ideal selves. In this case even marketing campaigns using anticipated regret in a short-term setting could be effective in convincing people to splurge, which is an addition to the findings presented by Keinan and Kivetz (2008). An example for such a case could be a company
promoting a convertible in a short-term funding scheme, showing a picture of a person in the convertible on an open road near the sea, with the slogan „What keeps you from complementing your ideal self?“ above. If this was followed by the presentation of the funding scheme (e.g. “Only 2% interest in our new funding scheme, this week only!”) and then the question „How much would you regret having missed out opportunity a week from now?“.

Finally my findings could also find application in prevention of compulsive buying and self-control trainings, as integrating people’s regulatory focus would be relevant in order to establish an individually efficient program of self-control enhancement. People with a chronic prevention focus for example could be taught to use near-future anticipated regret in situations in which they wish they could refrain from indulging, vs. distant-future regrets in situations in which they wish for more indulgence in their lives, whereas promotion-focused individuals should be taught other self-control mechanisms for reacting to a situation in which indulgence should be overcome.

**Limitations and Future Research**

First of all it shall be pointed out again, that a replication of the current study with a bigger sample size will be needed, in order to test if the improved significance of the model is indeed due to an interaction effect of temporal manipulation and chronic regulatory focus, as this could not be shown sufficiently. The small sample size thus also provides one of the biggest limitations of the current study.

Another question that the current research cannot yet answer sufficiently is whether it is indeed the production of promotion- and prevention-regrets respectively that forms the underlying component for these inter-individual differences between prevention- and promotion-focused individuals. As in the current study the time frame was manipulated and
yet, the exact type of regrets that were produced were neither specified nor measured, but only chronic regulatory focus was assessed, further studies will be necessary to untangle the effects of those two components.

Instead of just using chronic regulatory focus as a moderator variable, it would be interesting to include a manipulation of the type of regret produced, while a fixed temporal frame (i.e. either near-future or distant-future) could be provided. This way, the effects of the temporal manipulation could be separated more clearly from those caused by the difference in promotion- vs. prevention-regrets, which could not be untangled to such a degree by the current study. Also the degree to which either of them is responsible for a behavioral and attitude change could thus be estimated more specifically. Of further interest could be the simultaneous collection of data on chronic-regulatory-focus, as well as a manipulation of the type of regrets produced, as this could provide information on the relevance of regulatory fit (for an overview of regulatory fit in consumer decisions refer to Avnet & Higgins, 2006) in the context of the behavioral consequences of anticipated regret.

Going back to Keinan and Kivetz’ (2008) hyperopia-assumption once more and considering my findings, which would hint at mainly prevention-focused individuals fulfilling this assumption, it would be interesting to further explore whether prevention-focused individuals tend to suffer from a hyperopic self-control problem, compared to promotion-focused people who might be more likely to suffer from a myopic self-control problem. The implications of such research could further connect to impulsive buying as well as the promotion of different self-control strategies according to chronic regulatory focus.

Finally it would be highly interesting to test the effect of different types of regrets (i.e. distant-future vs. near-future) and manipulations of regulatory focus (i.e. promotion vs. prevention focus) in the context of advertising as specified above.
Considering my results it is thus to be said that Barney Stinson, when trying to convince his friend Ted to indulge in a night out with him, seems to be on the safe side with his advice of asking himself “What would make the best memory twenty years from now?”. As no matter which chronic regulatory focus predominates Ted, the time frame used should do the trick.
References


Appendix

List of Figures

Figure 1. Presentation format of hedonic vs. utilitarian price ...........................................17
Figure 2. People choosing hedonic price over utilitarian price by manipulation....................20
Figure 3. Attractiveness ratings of hedonic price vs. utilitarian price by manipulation ......23
Figure 4. Attractiveness ratings by manipulation and regulatory focus (split).......................26
Figure 5. Missing out, guilt and anticipated regret by manipulation and focus .................27
Figure 6. Feelings of missing out and guilt, by regulatory focus in comparison ..............28
List of Tables

Table 1. Planned contrasts of experimental groups on attraction ........................................22
Table 2. General linear models for attraction based on experimental group and regulatory focus .........................................................................................................................24
Table 3. Planned contrasts of experimental groups on attraction split by regulatory focus .......25
Additional Tables

Table 4.

Logistic Model Summaries for Choice of Hedonic vs. Utilitarian Price, Based on Temporal Manipulation

<table>
<thead>
<tr>
<th>Overall model excluding unspecified future time experimental group (hypothesis 1)</th>
<th>B</th>
<th>SE(B)</th>
<th>Wald $\chi^2$</th>
<th>OR</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EG</td>
<td>5.297</td>
<td>.036</td>
<td></td>
<td></td>
<td>.036</td>
</tr>
<tr>
<td>NEF</td>
<td>.036</td>
<td>.392</td>
<td>.009</td>
<td>1.037</td>
<td>.464</td>
</tr>
<tr>
<td>DIF</td>
<td>-.784</td>
<td>.372</td>
<td>4.426</td>
<td>.457</td>
<td>.018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model for distant-future experimental group vs. control group (hypothesis 1a)</th>
<th>B</th>
<th>SE(B)</th>
<th>Wald $\chi^2$</th>
<th>OR</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIF</td>
<td>-.765</td>
<td>.336</td>
<td>5.202</td>
<td>.465</td>
<td>.012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model for distant-future experimental group vs. near-future experimental group (hypothesis 1b)</th>
<th>B</th>
<th>SE(B)</th>
<th>Wald $\chi^2$</th>
<th>OR</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIF</td>
<td>-.820</td>
<td>.649</td>
<td>1.593</td>
<td>.441</td>
<td>.104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extended overall model including unspecified future time experimental group</th>
<th>B</th>
<th>SE(B)</th>
<th>Wald $\chi^2$</th>
<th>OR</th>
<th>p (1-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EG</td>
<td>7.033</td>
<td>.229</td>
<td></td>
<td></td>
<td>.036</td>
</tr>
<tr>
<td>NEF</td>
<td>-.135</td>
<td>.420</td>
<td>.103</td>
<td>.874</td>
<td>.375</td>
</tr>
<tr>
<td>DIF</td>
<td>-.954</td>
<td>.392</td>
<td>5.934</td>
<td>.385</td>
<td>.008</td>
</tr>
<tr>
<td>UT</td>
<td>.512</td>
<td>.439</td>
<td>1.360</td>
<td>1.669</td>
<td>.122</td>
</tr>
</tbody>
</table>

Note. EG = experimental group; NEF = near-future experimental group; DIF = distant-future experimental group;
UT = unspecified future time experimental group
Table 5.

*Logistic Model Summaries for Choice of Hedonic vs. Utilitarian Price, Based on Experimental Group and Regulatory Focus*

<table>
<thead>
<tr>
<th>Overall model excluding unspecified future time experimental group (hypothesis 3)</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
<td><strong>B</strong></td>
</tr>
<tr>
<td>EG</td>
<td>4.954</td>
</tr>
<tr>
<td>NEF</td>
<td>.088</td>
</tr>
<tr>
<td>DIF</td>
<td>-.792</td>
</tr>
<tr>
<td>Regulatory focus</td>
<td>.603</td>
</tr>
<tr>
<td>EG x regulatory focus</td>
<td></td>
</tr>
<tr>
<td>NEF x regulatory focus</td>
<td>.966</td>
</tr>
<tr>
<td>DIF x regulatory focus</td>
<td>-.314</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extended overall model including unspecified future time experimental group</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
<td><strong>B</strong></td>
</tr>
<tr>
<td>EG</td>
<td>5.875</td>
</tr>
<tr>
<td>NEF</td>
<td>-.035</td>
</tr>
<tr>
<td>DIF</td>
<td>-.914</td>
</tr>
<tr>
<td>UT</td>
<td>.368</td>
</tr>
<tr>
<td>Regulatory focus</td>
<td>.729</td>
</tr>
<tr>
<td>EG x regulatory focus</td>
<td>3.581</td>
</tr>
<tr>
<td>NEF x regulatory focus</td>
<td>.840</td>
</tr>
<tr>
<td>DIF x regulatory focus</td>
<td>-.440</td>
</tr>
<tr>
<td>UT x regulatory focus</td>
<td>.379</td>
</tr>
</tbody>
</table>

*Note.* EG = experimental group; NEF = near-future experimental group; DIF = distant-future experimental group; UT = unspecified future time experimental group.
Format of the Online-Experiment

Weicht Willkommen!

Bereits im Voraus möchte ich mich herzlich für Ihre Teilnahme an meiner Studie bedanken, durch die Sie mich sehr bei meiner Doktorarbeit an der Universität Wien unterstützt haben. Ihre Angaben werden absolut vertraulich und anonym behandelt, zu keiner wissenschaftlichen Zwecken verarbeitet und nicht an Dritte weitergegeben.

Dankeschön für Ihre Teilnahme an dieser Studie dürfen wir Sie herzlich einladen in Folge an einer Umfrage teilzunehmen. Die werden im Folgenden die Möglichkeit haben, zwischen den verschiedenen Praxen zu wählen und werden im Anschluss gesendet einige Fragen zu beantworten. Es gibt dabei keine richtigen oder falschen Antworten, es geht lediglich um Ihre persönlichen Erlebnisse.

Bei jeder Bearbeitung sollte die Dauer der Studie 30 Minuten nicht überschreiten.


Der Code besteht aus:
- den ersten beiden Buchstaben ihres Geburtsjahres (z.B. 91)
- den ersten beiden Buchstaben des Vornamens Ihres Vaters (z.B. Peter)
- den ersten beiden Buchstaben des Vornamens Ihrer Mutter (z.B. Beate)
- dem Tag Ihrer Geburtstage (z.B. 7. Januar)

Beispiel: W9P56Q07
Als Dankeschön für Ihre Teilnahme an dieser Studie dürfen wir Sie herzlich einladen, in Folge an einer von zwei Verlosungen teilzunehmen. Bitte sehen Sie sich die auf dieser Seite präsentierten Preise der zwei Verlosungen an.

VERLOSUNG A
O-Ticket (Event- & Konzerneintritt) Gutscheine im Wert von 50€, gültig für 1 Jahr, einlösbar im Online-Shop oder bei jedem O-Ticket Händler.

VERLOSUNG B
DM-Drogenartikel-Gutscheine im Wert von 50€, gültig für 1 Jahr, einlösbar im Online-Shop oder jeder DM-Drogenartikel-Filiale.

Gönner Sie sich einen vergnüglichen Abend mit einem Konzert Ihrer Wahl!

Bitte überlegen Sie sich nun, welche Entscheidung (Teilnahme an Verlosung A - O-Ticket Gutscheine/ Teilnahme an Verlosung B - DM Gutscheine) Sie in einem Tag mehr bedeuten würden. Wählen Sie bitte folgendem am ehesten passenden Kreuz.

[ ] Ich würde eine Entscheidung für die Teilnahme an Verlosung A - O-Ticket Gutscheine mehr bedeuten.

[ ] Ich würde eine Entscheidung für die Teilnahme an Verlosung B - DM Gutscheine mehr bedeuten.
Bitte treffen Sie nun Ihre Wahl indem Sie die entsprechende Alternative auswählen.

An folgender Vertragung würde ich gerne teilnehmen:

- A: 0-Ticket
- B: DM-Gutschein

Bitte beurteilen Sie nun, welchen der Preise empfinden Sie generell als attraktiver?

Bitte wählen Sie den am besten entsprechenden Kästchen aus:

- 0-Ticket Gutschein
- DM Gutschein
Stellen Sie sich nun bitte vor, Sie hätten Verlosung A (5-Ticket-Gutscheine) gewählt. 
...wie schockiert würden Sie sich fühlen, wenn Sie diese Entscheidung in einem Tag beurteilen sollten?  
Bitte wählen Sie den am besten entsprechenden Kurs aus: 
   sehr starkes Schuldgefühl  □ □ □ □ □ □
   sehr starkes Gefühl etwas verpasst zu haben  □ □ □ □ □ □

...wie sehr hätten Sie das Gefühl etwas verpasst zu haben, wenn Sie diese Entscheidung in einem Tag beurteilen sollten?  
Bitte wählen Sie den am besten entsprechenden Kurs aus: 
   überaus nicht das Gefühl etwas verpasst zu haben  □ □ □ □ □ □
   sehr starkes Gefühl etwas verpasst zu haben  □ □ □ □ □ □

Stellen Sie sich nun bitte vor, Sie hätten Verlosung B (DM Gutscheine) gewählt. 
...wie schockiert würden Sie sich fühlen, wenn Sie diese Entscheidung in einem Tag beurteilen sollten?  
Bitte wählen Sie den am besten entsprechenden Kurs aus: 
   sehr starkes Schuldgefühl  □ □ □ □ □ □
   sehr starkes Gefühl etwas verpasst zu haben  □ □ □ □ □ □

...wie sehr hätten Sie das Gefühl etwas verpasst zu haben, wenn Sie diese Entscheidung in einem Tag beurteilen sollten?  
Bitte wählen Sie den am besten entsprechenden Kurs aus: 
   überaus nicht das Gefühl etwas verpasst zu haben  □ □ □ □ □ □
   sehr starkes Gefühl etwas verpasst zu haben  □ □ □ □ □ □
Bitte beurteilen Sie folgend die sechs vorgegebenen Preise auf einige Dimensionen. Notieren Sie hierfür bitte die angegebene Skala von 1 (oberhalb nicht) bis 7 (außerordentlich).

<table>
<thead>
<tr>
<th>Preis</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weitere

Zum Abschluss haben wir noch ein paar Fragen zu Ihrer Person:

Alter

Geschlecht:

○ weiblich ○ männlich

Wie leben Sie dazwischen:

○ in Bayern ○ in Deutschland ○ Sonstiges

Familienstand

Sollte keine der Optionen auf Sie zutreffen, wählen Sie bitte die am ehesten zutreffende Option.

○ verheiratet ○ in Eheverhältnis ○ verheiratet ○ geschieden ○ verwitwet

Was ist Ihre aktuelle Hauptbeschäftigung?

Sollte keine der Optionen auf Sie zutreffen, wählen Sie bitte die am ehesten zutreffende Option.

○ Stimulation ○ berufstätig ○ Arbeitslos ○ pensioniert ○ nicht angemeldet ○ ohne Beschäftigung ○ arbeitslos unten

Erwerbstätigkeit

Sollte keine der Optionen auf Sie zutreffen, wählen Sie bitte die am ehesten zutreffende Option.

○ nicht angemeldet ○ berufstätig ○ Teilzeit ○ Vollzeit

Wie viele Personen leben in Ihrem Haushalt?

Personen

Wie hoch ist Ihr geschätztes Netto-Haushaltseinkommen pro Monat (nach Abzug der Steuern)?

€
Wie hoch ist Ihr geschätztes monatlich frei verfügbares persönliches Budget (inkl. finanzieller Unterstützung, ständicher Zuweisung o.ä.) nach Abzug aller fixen Kosten (etwa für Miete, Betriebskosten, Versicherungen, Steuern und etwaige Ratenzahlungen) nicht aber der variablen Kosten (wie Essen gehen, Einkauf, Ausflüge, Anschaffungen etc.)? Nutzen Sie für Ihre Schätzung bitte den Schieberegler und indizieren Sie die am ehesten passende Position.

Sparen Sie derzeit für eine/mehre relevante Investition(en)?
- Ja
- Nein

Falls Ja: Wie viel möchten Sie für diese Investition(en) noch in etwa ansparen?

Haben Sie laufende Kreditrückzahlungen?
- Ja
- Nein

Falls Ja: Wie hoch sind Ihre monatlichen Zahlen in etwa?

Studieren Sie Psychologie oder haben Sie länger als vier Semester Psychologie studiert?
- Ja
- Nein

Nehmen Sie an dieser Studie im Zuge des Psychologie-Studiums teil (WISPI)?
- Ja
- Nein

Was war Ihrer Meinung nach das Ziel der Studie?

Haben Sie Anregungen/Anmerkungen zu dieser Studie?
Scales

1. Pretest Items

Im Folgenden bitten wir Sie um Bewertung des Preises mit Hilfe von Eigenschaftspaaren. Es gibt keine richtigen oder falschen Antworten. Auch wenn Ihnen bei manchen Fragen eine Einschätzung schwer fallen sollte, wählen Sie bitte jeweils spontan denjenigen Punkt zwischen den beiden Extremen, der am ehesten Ihrer Einschätzung entspricht.

- nicht reizvoll
- nutzlos
- unsympathisch
- minderwertig
- nicht Spaß bringend
- schlecht
- unnötig
- abstoßend
- nicht erfreulich
- nicht hilfreich
- nicht attraktiv
- reizvoll
- nützlich
- sympatisch
- wertvoll
- Spaß bringend
- gut
- notwendig
- anziehend
- erfreulich
- hilfreich
- attraktiv

---

2. Items RFQ

Zum Beantworten der untenstehenden Fragen wähle bitte jeweils eine der 5 Optionen.

Zum Beantworten der untenstehenden Fragen wähle bitte eine Ziffer zwischen 1 (überhaupt nicht zutreffend) und 5 (sehr zutreffend).

- Mangels Bandbreite hat mir schon bald zu Probleme bereitet.
- Ich bin auf dem Weg zum Erfolg.
- Sie gibt mir wenig Freude und Tätigkeiten, die ich aus Interesse verfolge.
Zusammenfassung

Ich versichere, dass ich die Diplomarbeit ohne fremde Hilfe und ohne Benutzung anderer als der angegebenen Quellen angefertigt habe, und dass die Arbeit in gleicher oder ähnlicher Form noch keiner anderen Prüfungsbehörde vorgelegen hat. Alle Ausführungen der Arbeit, die wörtlich oder sinngemäß übernommen wurden, sind als solche gekennzeichnet.

Wien, April 2014

Cornelia Kastner
Curriculum Vitae

Cornelia Kastner

Employment

Oct. 2011 to date Herbert Jilg Coaching & Training, Vienna, Austria
Backoffice Manager and Training Assistant

07/2013 – 08/2013 Education First – EF Language Travel, Brighton, UK
Activity Manager, Student Services Coordinator and Assistant Center Manager

10/2012 – 02/2013 University of Vienna, Vienna, Austria
School of Psychology, Department of Applied Psychology: Work, Education, Economy; Applied Social Psychology and Consumer Research
Research study assistant

10/2009 – 06/2010 University of Vienna, Vienna, Austria
School of Psychology, Department of Basic Psychological Research
Research study assistant

Education

10/2007 – University of Vienna, Vienna, Austria
Degree in Psychology ("Diplomstudium")

02/2012 – 06/2012 University of Queensland, Brisbane, Australia
Exchange semester in the framework of the Joint Study scholarship

09/1999 – 06/2007 BG1 Stubenbastei (language focused high school), Vienna, Austria
- Matura (equivalent to A-Levels)

Additional Skills

Languages: German (native); English (fluent: spoken and written; TOEFL-IBT: 115/120); French (very good); Italian (basic)

Computing: Windows, OSX, Microsoft Office Applications (Word, Excel, Powerpoint), Prezi, Keynote, E-Mail and Internet, science- and statistics-programs (e.g. Unipark, SPSS, …)

Personal Interests

photography, creative writing, volleyball, study of foreign cultures and languages (currently starting to undertake online courses in Spanish and Mandarin Chinese)