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How Autonomy Affects Hedonic Consumption

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NEDERLANDSTALIGE SAMENVATTING

In drie verschillende papers onderzoeken we hoe belangrijk een gevoel van autonomie en vrijheid is voor hedonische consumptie. In een eerste paper onderzoeken we hoe een gevoel van autonomie in een hedonische versus utilitaire aankoopssituatie de verwachte levensduur van een product gaat beïnvloeden. De levensduur van een product is belangrijk, een consument verwacht immers dat een product voor een redelijke periode zal meegaan wanneer dit wordt aangekocht. Eerder onderzoek toonde aan dat consumenten de levensduur van een product proberen in te schatten op basis van elementen verbonden aan de marketing mix. Deze elementen zijn meestal niet inherent verbonden aan een product en kunnen veranderen. Prijs en imago van een merk kunnen hier bijvoorbeeld een belangrijke rol in spelen in. Ons onderzoek daarentegen gaat na in welke mate de geschatte levensduur van een product afhangt van de gemoedstoestand van de consument. In deze paper beargumenteren we dat de geschatte levensduur van een product afhangt van hoe pijnlijk het is voor de consument om geld uit te geven aan het product. Onze resultaten tonen aan dat hoe pijnlijker dit is, hoe langer men verwacht dat het product zal meegaan. Consumenten willen namelijk een hogere belonging voor hun “lijden”. Verder tonen we aan dat het pijnlijker is om te betalen wanneer de consument zijn/haar gevoelens van autonomie belemmerd worden. Ook blijkt dat hedonische aankopen meer gevoelens van autonomie opwekken dan utilitaire. Bijgevolg denken consumenten dat utilitaire producten langer meegaan dan hedonische. Veel producten kunnen zowel voor hedonische als utilitaire redenen aangekocht worden. Deze eerste paper besluit dat de lengte van de geschatte levensduur mee bepaald zal worden door de aankoopmotivatie.

De tweede paper onderzoekt hoe individuele verschillen in koopgedrag veranderen in situaties waarin consumenten geen of wel autonomie hebben. Eerder onderzoek toonde aan dat de hoeveelheid geld dat men wil uitgeven (deels) te verklaren valt door verschillende karaktereigenschappen. Verkwisters geven meer geld uit dan ze eigenlijk zouden mogen, omdat ze minder of geen pijn ervaren wanneer ze geld uitgeven. Gierigaards daarentegen gaan veel vlugger pijn ervaren wanneer ze geld uitgeven. Deze persoonlijkheidskenmerken zijn belangrijk en verklaren gedrag in veel verschillende situaties. In de tweede paper gaan wij echter na of verkwisters wel altijd meer geld uitgeven dan gierigaards. Ons onderzoek toont aan dat verkwisters stoppen met geld uitgeven wanneer hun gevoel van persoonlijk controle wordt belemmerd. Drie verschillende studies onderzoeken dit fenomeen en tonen

herhaaldelijk aan dat verkwisters niet langer verschillen van gierigaards wanneer ze geen controle meer ervaren omdat dat hun gevoelens van autonomie reduceert. Gierigaards gedragen zich niet anders wanneer ze wel of geen autonomie ervaren in een aankoop situatie.

In een derde paper onderzoeken we hoe religie gevoelens van autonomie kan beïnvloeden en er voor zorgt dat mensen minder geld willen uitgeven aan hedonische producten. Eerder onderzoek toonde reeds aan dat religie gedrag op twee manieren kan beïnvloeden. Religie kan er enerzijds voor zorgen dat mensen bepaalde plezierige producten niet langer zullen kopen omwille van een bezorgdheid voor de meningen van anderen. Anderzijds kan religie er ook voor zorgen dat een product minder wenselijk wordt en mensen daarom het product niet langer willen. We hebben deze invloeden in drie verschillende studies getest. In een eerste studie hebben we secundaire data over consumentenkredieten en religiositeit vergeleken. Eerder onderzoek toonde reeds aan dat consumenten vooral consumentenkredieten aangaan voor hedonische aankopen. Onze analyses tonen aan dat religieuze mensen minder consumentenkredieten aangaan. In twee vervolgstudies hebben we dit effect gerepliceerd. Deze studies tonen aan dat religie er voor kan zorgen dat consumenten gevoeliger worden voor de goedkeuring van anderen wat een plezierig product minder plezierig maakt.

ENGLISH SUMMARY

Across three papers we investigate how important feelings of autonomy are for (hedonic) consumption. In the first paper, we investigate how (the absence) of feelings of autonomy in a hedonic (versus utilitarian) purchase situation affect the expected lifetime of a product. The lifetime of a product is important, but unknown at the moment of purchase. Earlier research argues that consumers will try to infer this from external signals, our research proposes that consumers also draw on internal states to infer product lifetime. In particular, we argue that consumers infer product lifetime from the pain of paying. In addition, we propose that pain of paying is exacerbated when consumers experience a lack of autonomy in their purchases. Finally, we suggest that consumers more readily experience autonomy for hedonic than utilitarian purchases, resulting in a longer perceived longevity for utilitarian products than for hedonic ones. Analysis of real market data on secondhand cars and the results of three experimental studies confirm our propositions. The results suggest that the mental categorization of a purchase as utilitarian rather than hedonic has consequences for the purchase of longevity-related services, such as extended services or maintenance contracts.

The second paper investigates how chronic differences in spending behavior interact with (the lack) of autonomy. It has been shown that individual differences in spending behavior predict over- and under spending. Spendthrifts spend more than they ideally should, tightwads spend less than they ideally prefer because of a chronic (in)sensitivity to the pain of paying. Despite the reliability of these personality traits in predicting numerous spending behaviors, we suggest that these dispositions are not univocally related to spending behavior. In the current paper, we argue that spendthrifts occasionally act like tightwads when their sense of personal control is threatened. We manipulated personal control in three different ways (through third party interference, confrontation with a practical problem, and, sold out products). All our studies demonstrated that spendthrifts' willingness to spend dropped to similar (or lower) levels as (than) tightwads' when experiencing a threat to personal control. Reduced feelings of autonomy mediated spendthrifts' decreased willingness to spend when their personal control was threatened.

The third paper studies how reminders of religion affect feelings of autonomy and therefore curtails the willingness to spend money on hedonic (but not utilitarian) products. Previous research has shown that religions either adjust behavior because of intrinsically compelling arguments or because of a fear of approval based pressures. We tested how these two different forms of behavioral regulation intervene with pleasurable consumption. We

tested our hypotheses across three different studies. In a first study we matched secondary data on religiosity and credit card indebtedness across the United States. Analysis of this data yielded that the state level average credit card debt per borrower could be explained by the state level average religiosity. Credit cards are more easily used to buy hedonic products. Hence, the results of the first study are a first indication of religions' influence on hedonic consumption. We replicated these findings in two experimental settings and found that reminders of religion could curtail the willingness to spend money on hedonic products for two different reasons. If the hedonic products were considered as minor sinful, the respondents refrained from spending because of a concern with approval based pressures. When the hedonic products were considered as major sinful, reminders of religion caused to intrinsically devalue them.



INTRODUCTION

CHAPTER I: INTRODUCTION

1. A FEW WORDS ON PLEASURABLE CONSUMPTION

Hedonists believe that pleasure is the primary and utter most important goal to achieve in life. Virtually every sane person values pleasure. Nevertheless, need for pleasure appears to be a difficult urge to satisfy. When feeling hungry, the rational strategy to follow would be eating something. When feeling poor, the rational solution would be the acquisition of money. Yet, when feeling deprived of pleasure the purchase of hedonic products does not logically lead to the experience of pleasure. The hedonic paradox states that pleasure is a subjective experience that may be difficult to pursuit. It is possible to buy products, but impossible to buy pleasure. When having a need for pleasure it is not enough to buy a so-called hedonic product in order to satisfy that need. The acquisition of hedonic products is rather viewed as a gratuitous way to achieve pleasure.

Imagine Tess, a girl who likes to have fun. Lately, she was not feeling so happy and planned to do something about it. She planned to take up cycling as a hobby in order to have more fun in her leisure time. Accordingly, she bought a bike to execute her hobby. Theory on hedonic consumption would argue that the bike is considered to be a hedonic product, because she bought the bike to have fun. However, purchasing a bike does not guarantee that her desires will be satisfied. The bike could allow Tess to have fun, on the condition that the bike is actually able to satisfy her wishes. An important condition for making wishes come true is the experience of autonomy, or the freedom to act as one wants.

A first goal of this dissertation is to scrutinize the importance of feelings of autonomy for (hedonic) consumption. People experience autonomy when they are able to exert causal influence in a given (purchase) situation and express their desires. Unfortunately, the capacity to do so could be hampered in a variety of ways. Bad luck (e.g., out of stock alternatives) or third party interference (e.g., sales people) may become obstacles and limit consumers' sense of freedom. Furthermore, social norms and values prescribe what (not) to do and form the moral guidance of good conduct. Social norms and values confine choice alternatives which could be detrimental for the expression of desires. Consumers are not always able to spend money on the things they personally value the most. Sometimes, consumers could even be forced to spend money without really wanting it (e.g., to resolve a practical problem). It is clear that all these situations may affect feelings of autonomy. The goal of the current

dissertation is to investigate how (a lack of) feelings of autonomy affects hedonic consumption in a variety of settings.

The hedonic paradox further argues that pleasure is a subjective experience. Tess can for example experience a lot of fun with her bike but that does not imply that somebody else will achieve similar levels of happiness with it. Some conditions have to be met in order to have fun with a product, but individual differences are also relevant. Research on consumer behavior repetitively has shown that some people are unable to indulge themselves because of justification issues. Such people might be less likely to respond to their desires and accordingly may benefit less from feelings of autonomy. The second goal of my dissertation is to investigate which individuals are more (or less) likely to respond to feelings of autonomy.

Throughout this dissertation we aim to investigate the importance of autonomy for hedonic consumption. Autonomy enables the expression of subjective desires and fantasies, and could therefore imbue a product with subjective meaning and affect its perception. The third goal of my dissertation is to investigate how feelings of autonomy are likely to alter the perception of a product. Having versus lacking autonomy enables or disables the expression of desires and hence could illicit affective reactions. We aim to investigate how such an altered affective state(s) could change the perception of a product.

In this introductory part we sketched some complexities related to hedonic consumption. These questions will form the guideline of this dissertation. We aim to scrutinize each of these problems and will try to understand some of the complexities associated with the hedonic paradox. But before digging into this matter, we will discuss what hedonic consumption actually is.

2. DEFINING HEDONIC CONSUMPTION

The idea that pleasure is important in life could be traced back to the work of Aristotle. The word ‘hedonism’ comes from the ancient Greek for ‘pleasure’. Aristotle recognized the importance of happiness and understood that external goods may help achieving it (Feldman 2002). Since the emergence of consumer research as a separate discipline in the mid-20th century, scientific research started to focus on the empirical study of enjoyment related consumption, which gave birth to more coherent theories. Besides the emergence of

systematic theories, several different paradigms to study hedonic consumption emerged. Each approach with its own merits and weaknesses.

A milestone in the research on hedonic consumption is the seminal work by Hirschman and Holbrook (1982). Hirschman and Holbrook were among the first to combine earlier insights on emotive responses, motivation research and product symbolism to advocate systematic research on hedonic consumption. According to them, hedonic consumption comprised those facets of consumer behavior that relate to the multisensory, fantasy and emotive aspects of one's experience with products. Multisensory implies that all senses can be involved and pleased. Hirschman and Holbrook (1982) argue that hedonic consumption encompasses a subjective experience of sensorial perceptions. Such experiences arise because consumers mentally construct a pleasurable reality around a product. The idea that mental imagery plays an important role in hedonic consumption takes a central stand in their theory.

Feelings of autonomy are important for the realization of inner wishes, desires and fantasies because it enables them. Autonomy encompasses those situations that allow consumers to express their inner wants, without any kind of demands to act in a certain way. Imagine for instance a situation in which you plan to buy a desirable product. Once at the store your desired alternative is no longer available. Or imagine a situation in which salespeople use high-pressure techniques to sell their products. Such situations limit your autonomy and possibilities to express your inner wants, and could therefore hamper the pleasurable experience as initially imagined or fantasized.

The idea that hedonic experiences are tied to desires and imaginations incited a vast amount of researchers to discriminate products based on their capacity to evoke such experiences (e.g., Babin, Darden, and Griffin 1994; Childers et al. 2001; Voss, Spangenberg, and Grohmann 2003). These psychometric studies aim to identify pleasurable products, but also try to identify the conceptual antipode: utilitarian products. Strahilevitz and Myers (1998) define the difference clearly. Hedonic consumption is pleasure oriented consumption and encompasses something fun, experiential, and perhaps even 'decadent'. Hedonic and luxury consumption are closely related to one another. Utilitarian products stand for the opposite. Utilitarian consumption is goal-oriented consumption; these products are bought to carry out necessary functions. Dhar and Wertenbroch (2000) define hedonic consumption as experiential as it reflects desires and evokes fun, pleasure, and excitement whereas utilitarian consumption is more practical and instrumental. Research on the differences between hedonic and utilitarian consumption frequently relies on a product-based approach (e.g., Chandon 2010; Ferraro, Shiv and Bettman 2005; Thomas, Desai, and Seenivasan, 2011; Wertenbroch,

1998). Very often, this kind of research requires respondents to choose between a hedonic or utilitarian alternative. One major advantage of such product-based approach is that it allows to study the process of making trade-offs' between what is fun and what is practical. However, a product-based approach is not flawless.

There is reason to believe that a product-based approach is not able to fully grasp the differences between hedonic versus utilitarian consumption. A product-based approach construes consumption at a more general level and assumes that the so-called hedonic (utilitarian) products are only bought for hedonic (utilitarian) purposes. However, products often possess both hedonic and utilitarian attributes. For example, laundry detergents may be prototypically considered as practical and functional because of its cleaning abilities but can also be chosen for its' performance on an olfactory, hedonic dimension. Similarly, it is fun to drive a convertible, but considerations regarding utilitarian attributes (e.g., fuel consumption) could be important as well. Besides neglecting the existence of multiple kinds of attributes, a product-based approach also ignores the importance of the situation (Alba and Williams 2013). For example, relative to a bottle of wine, a cellphone may be interpreted as utilitarian. Nonetheless, the phone may incidentally become a hedonic product when using it to play a game.

It is clear that a product-based approach is not always the best solution in order to fully grasp the relevant effects. Studying purchase motivations instead of purchase behavior could help. A motivation-based approach studies the reasons why consumers buy a product, which is not taken into account by a product-based approach. The activation of hedonic versus utilitarian purchase goals and motivations allows to comprehend when a particular product will be used for hedonic or utilitarian purposes (Chernev 2004) or when specific types of attributes will be considered (Alba and Williams 2013). Motivations and goals direct consumers' attention (Kunda 1990) and could also change the perception of a particular product.

3. HEDONIC VERSUS UTILITARIAN MINDSETS

Hedonic versus utilitarian motivations steer how a product is perceived, but these motivations also seem to map onto independent modes of product evaluation (Dhar and Wertenbroch 2000; Botti and McGill 2011; Pham 1998). Hedonic purchases are affectively driven, and aim to achieve short-term goals. Utilitarian purchases are cognitively driven, and

aim to achieve longer-term goals. Interestingly, a motivation-based approach considers the mental construction of products as hedonic (or utilitarian) as essential to the consumption experience. Pleasure is a side-product of consumption, which is connected to fantasies and desires. Studying the hedonic and/or utilitarian motivation instead of a product-based approach should offer a more detailed picture of what these modes of consumption really encompass. Because a great deal of hedonic consumption occurs between the ears, it remains invisible and therefore is a potential fertile field of research. Pleasurable things have an underlying reality or true nature that one cannot observe directly, and it is this hidden nature that really matters (Bloom 2011). The idea that purchase motivations are important to comprehend hedonic versus utilitarian consumption is rooted in theories of motivated cognition (Kunda 1990; Balci et al. 2006; Proffitt, Creem, and Zosh 2001; Yang, Dixon, and Proffitt 1999). These theories argue that motivations bias perception by affecting strategies for accessing, constructing and evaluating beliefs. Motivations affect how information is selected and processed which affects the perception of a product. Aside from selectively directing attention, purchase motivations could also bias the perception of the attended attributes. Bruner and Goodman (1947) tested how desirability affects the perception of a product's size. Their research demonstrated that the size of objects (coins) is estimated bigger when the object was more desirable (poor kids instead of rich kids). More recent research also demonstrated that desirable high status products are assumed to be bigger (Dubois, Rucker, and Galinsky 2012).

Obviously, motivations and goals color several aspects of the perceived world. However, consumers are not always able to perceive or attend everything. Sometimes, they have to make some assumptions about products especially when planning to buy something. For example, several quality-related attributes are often unobservable and unknown before the product is owned or bought. In such situations, consumers have to guess how the product will score. Traditional research argues that consumers tend to rely on external cues to guess the quality of a product (Kirmani and Rao 2000). These external cues often refer to elements of the marketing-mix: e.g., price, brand name ... Despite the eligibility of this idea, current insights on how motivation affects processing and perception of products suggests that consumers' perception of the unknown attributes could also be affected by purchase motivations. The estimation of unknown information or unobservable attributes may also be contingent upon internal cues related to the purchase goal (instead of only relying on external cues). Buying products for pleasure or for practical purposes presumably activates some expectations and assumptions that may color *ex ante* estimations. Intriguingly, the same

product can be bought for hedonic or utilitarian purposes. Hence, unobservable attributes of the same product could be estimated differently when having a hedonic versus utilitarian purchase motivation.

4. THE PERCEIVED PRICE OF PLEASURE

Earlier research demonstrated that the price that is paid for a product drives the perception of a product. Price is frequently regarded as a viable indication of quality: more expensive products are assumed to offer higher quality (e.g., Kardes et al., 2004; Kirmani and Rao, 2000; Levin & Johnson, 1984). At the same time, the perception of the resources needed to procure a product is also purchase-goal dependent. Wakefield and Inman (2003) were one of the first to investigate consumers' motivational price-sensitivity. In general, their studies reveal that pleasurable consumption is more price-inelastic because consumers are less concerned with the price of fun. For example, in one of their studies they showed that consumers were less price-sensitive when buying pizzas for hedonic instead of utilitarian purposes. Utilitarian consumers turned out to be more concerned with usefulness and were less price-inelastic, meaning that higher prices reduced their spending. Wakefield and Inman (2003) studied purchase intentions of similar products under different purchase motivations. Their research confirms that purchase goals alter price perceptions. In addition, other research also demonstrated that (non-)monetary promotions are more (less) important for utilitarian (hedonic) purchases (Park and Mowen 2007; Chandon, Wansink, and Laurent 2000). This further supports the idea that utilitarian shopping motivations activate price-sensitivity.

The idea that price is interpreted differently according to the purchase motivation could be at stake with rational theory. Classic economic theory argues that purchase decisions depend on the rational comparison of costs and benefits. The objective amount of benefits does not change when you buy the same product for different reasons. However, such rational comparisons are not frequently made and opportunity costs are not always spontaneously considered (Frederick et al., 2009). Instead, consumers seem to rely on the emotions that the prospect of spending elicits (Prelec and Loewenstein 1998). Spending is deterred when one expects too much negative emotions or pain in response to spending. Emotions are a viable source of information (Pham, 2004; Schwarz and Clore, 1996) and the emotions that consumers experience in the prospect of spending are likely to color the perception of a product.

Confirmatory to this proposition is Prelec & Loewenstein's (1998) idea that the pleasure derived from a product is contingent upon the pain associated with its payment. Logically, the costs incurred for a product reduces the total utility that could be derived from the product. However, costs and spent resources have shown to be malleable and are subject to situation dependent interpretations (Prelec and Loewenstein 1998). First, consumers seem to enjoy products that are paid as if they were free, increasing the pleasure associated with the product. Down payments increase the pain of payment and thus reduce the pleasure associated with a product (Prelec and Loewenstein 1998). Second, the degree to which the transfer of resources is coupled to the actual payment of a product affects the interpretation of the costs. For example, paying with larger denominations (Raghubir and Srivastava 2009) and with cash instead of credit card (Raghubir and Srivastava 2008) has shown to be more unpleasant because it increases the salience of transferring actual amounts of money. Bottom-line, there is some variation possible in the interpretation of the resources paid for a product and this may affect the (expected) benefits.

Summing up, we already mentioned that (hedonic versus utilitarian) purchase motivations affect the perception a product. Similar products, bought for hedonic versus utilitarian reasons are differently perceived. We also argued that purchase motivations alter the affective interpretation of incurred costs, and that product related benefits are a function of how the payments are perceived. Taking all these considerations into account, it seems convincing that the perception of a product is dependent upon the purchase motivation because the incurred costs are differently interpreted. The (emotional) interpretation of the price could thus serve as a mediating process of quality perceptions. Consequently, the same price may evoke different quality expectations because it could evoke different affective reactions. As this relation has not been closely examined, we aim to clarify how the motivation to buy a product and the transfer of resources could be related to the evaluation of a product. Unraveling how these motivations and perceptions are related to each other should offer new insights in how consumers construe information about unknown characteristics of products. Up to now, existing research assumed that consumers infer unknown information from observable attributes related to the marketing mix elements. If purchase motivation affects the interpretation of the price and therefore the perception of a product, we advance knowledge on this topic by showing that consumers also infer information from internal cues related to the purchase goal.

5. INDIVIDUAL DIFFERENCES

We argued that how consumers feel about paying for a product is a function of motivational goal adherence. However, the interpretation of prices also differs along personality traits (Rick, Cryder, and Loewenstein 2008; Lastovicka et al. 1999). Clearly, tightwads encounter more difficulties to part from their money than spendthrifts. The so-called spendthrifts are less sensitive to the pain of paying leading them to spend more money. Tightwads on the other hand are more sensitive to negative affective reactions in the prospect of spending, which limits their spending behavior. Research on spending behavior predominantly has corroborated the existence and consequences of these personality traits (Frederick et al. 2009; Haws and Poynor 2008; Lynch et al. 2010).

As spendthrifts find it less difficult to spend money, they more easily engage in impulsive purchase behavior (Rick, Cryder, and Loewenstein 2008). Impulsive purchases occur in response to pleasurable temptations (Rook 1987). Spending differences between tightwads and spendthrifts could be most notable in the field of pleasurable consumption. Pleasurable consumption has been associated with freedom and autonomy (Botti and McGill 2011). In addition, freedom and autonomy constitute an important part of impulsive consumption. Impulsive purchases occur unintentionally and unplanned (Baumeister 2002) and mirror a free, unreflective desire to buy without thoughtful considerations (Vohs and Faber 2007). Situational feelings of autonomy could thus be a key driver for spendthrifts' spending habits. Yet, the determinative role of autonomy for spendthrifts (versus tightwads) has not been investigated.

Previous research showed that spending differences between tightwads and spendthrifts could temporarily vanish. For example, paying with credit card instead of cash (Raghubir and Srivastava 2008) or with small instead of large denominations (Raghubir and Srivastava, 2009) makes the transfer of money less salient and causes tightwads to spend more, reducing the spending gap. However, no research has investigated if spendthrifts ever refrain from spending. As argued, there is reason to believe that feelings of autonomy could be important for spendthrifts. Feelings of autonomy could be a psychological prerequisite for spendthrifts to start spending. Investigating this is potentially important to fully grasp spendthrifts' behavior. Understanding spendthrifts spending behavior is theoretically relevant, but is also of social significance. Empirical research yielded that spendthrifts are responsible for the majority of credit card debt (Rick, Cryder, and Loewenstein 2008). Credit card debt and the resulting defaults pose a mental burden on the everyday lives of a significant amount of

people (Wilson 2013). In order to comprehend this social problem, a profound understanding of spendthrifts' spending behavior is crucial. Throughout this dissertation, we aim to advance knowledge on this topic by investigating the role of autonomy in spendthrifts' spending behavior.

6. NORMS, VALUES AND AUTONOMY: THE CASE OF RELIGION

Humans prefer to be causal agents and like to be the origin of their own behavior (deCharms, 1968). Yet, actions and behavior are determined by the self or external forces (Deci and Ryan 1985). External forces operate beyond an individual's control and confine the ability to act as a causal agent. These limitations, and therefore the opportunity to act freely, are contingent upon various situational factors (Botti and McGill 2011; Deci and Ryan 1985). Several external forces can be determinative for behavior. For instance, third parties can limit individual freedom by directing one's conduct (Chen and Sengupta 2014), e.g., a trainer enforcing a running schedule. Fate or bad luck can also be determinative for one's actions and conduct (Rotter 1966), e.g., a sudden car breakdown limits your transportation opportunities. At a more general level, societal norms and values prescribe what is (not) allowed and (not) supposed to do (Durkheim 1897), e.g., cultural norms prohibit polygamy. In this way, societal norms and values are able to restrict freedom of conduct and autonomy. As norms and values are frequently viewed as a feature of society, the scope of consequences is broad.

Norms and values affect autonomy, but their comprehensiveness differs from one society to another. Some societies offer more freedom for individuals to act autonomously than others. For instance, Japanese society is characterized by less autonomy than the United States (Berry 2002). Within country differences also exist. Survey research revealed that citizens of Illinois generally experience more autonomy than inhabitants of Alabama (Hock 2004). Curiously, a report on credit card delinquency (Wilson 2013) revealed that credit card debt occurs more frequently in the U.S. compared to Japan. In addition, Alabamians carry more credit card debt than Illinoisans. Credit card debt has been used as an indicator of impulsive consumption (e.g., Haws, Bearden, and Nenkov, 2011; Thomas et al., 2011). Impulsive consumption and the resulting credit card debt could thus be a society specific phenomenon. It is plausible that broader societal characteristics are important to fully grasp the underpinnings of impulsive consumption and the resulting credit card indebtedness.

Historically, religion has shown to be a source of norms that regulate behavior and therefore could restrict people's sense of freedom (Durkheim 1912). Religions provide a collective consciousness and encompass moral forces that discriminate between what should (not) be done. As religion imposes rules, it could limit consumers' sense of freedom and autonomy. The influential force of religion could especially be relevant for impulsive purchase behavior. Impulsive purchase behavior involves the urge to buy something due to the sudden activation of hedonic goals (Rook 1987). Impulsive purchase behavior typically encompasses a conflict between temporary desires and longer term benchmarks of behavior (Hoch and Loewenstein 1991). Immediate pleasure and gratification are sometimes in conflict with longer term norms and values. Religion is known to be a source of such ideals, values, morals and social expectations. Indeed, previous research yielded a correlational link between several kinds of impulsive behavior and religiosity. However, no causal link or mechanism has been documented yet. We aim to shed a light on this issue by investigating religion's causal influence on pleasurable consumption.

7. DISSERTATION OUTLINE

The hedonic paradox argues that pleasure is considered to be a side-product of consumption that arises under the right conditions. In the introduction we have set three goals to unravel some of the complexities associated with the hedonic paradox. The overall goal is to gain insights in what is determinative for having fun. We also aim to discover the importance of individual differences and will try to understand how a hedonic (versus utilitarian) purchase motivation affects the perception of a product.

In the first empirical chapter called "Pleasure for a moment, functionality for a lifetime", we investigate how a hedonic purchase motivation affects the perception of a product. We argue that the experience of autonomy is important in hedonic purchase situations. In this paper we demonstrate that the absence of autonomy is likely to evoke more negative affective reactions towards spending money. We further show that this exacerbated pain of paying due to a lack in autonomy urges consumers to anticipate more rewards under the form of a longer lasting product. As the experience of autonomy is tied to a hedonic purchase motivation, we show that a longer lasting product is more important when having a utilitarian instead of hedonic purchase motivation.

In the second empirical chapter called “On becoming frugal: threat to personal control can make spendthrifts act like tightwads” we further explore the role of autonomy by investigating if all consumers act similarly when having or lacking it. We manipulate autonomy by inducing a threat to personal control and see if tightwads and spendthrifts respond differently to this altered state. Our findings suggest that especially spendthrifts are responsive to situations in which they have versus lack autonomy. When experiencing a threat to personal control in a spending situation, spendthrifts’ spending dropped and no longer differed from tightwads’. Doing so, we highlight the importance of autonomy and question the stability of the spending gap between spendthrifts and tightwads.

In the third empirical chapter “How God determines what we buy” we further explore the role of autonomy on (hedonic) consumption, but from a different perspective. Social norms and values are likely to govern behavior and thus affect feelings of freedom and autonomy. In this paper we investigate how exposure to religion can affect hedonic consumption. Overall we demonstrate that exposure to religion can negatively affect hedonic consumption, but for different reasons. Contingent on the moral classification of the hedonically tempting behavior, people can refrain from doing it because of a concern with approval based pressures or because of an intrinsic devaluation of the behavior at hand.

**PLEASURE FOR A MOMENT,
FUNCTIONALITY FOR A
LIFETIME: THE IMPACT OF
AUTONOMY ON PRODUCT
LIFETIME EXPECTANCIES**

CHAPTER II: PLEASURE FOR A MOMENT, FUNCTIONALITY FOR A LIFETIME: THE IMPACT OF AUTONOMY ON PRODUCT LIFETIME EXPECTANCIES

Buyers must often infer various unobservable product attributes at the time of purchase (Kirmani and Rao 2000). One of the most important unobservable attributes is the expected longevity of a product. While actual longevity can only be assessed *ex post*, consumers nevertheless try to estimate it *ex ante*, drawing on several cues to do so (Kirmani and Rao 2000), such as brand (Price and Dawar 2002) and warranty (Huysentruyt and Read 2010). This article shows that product lifetime estimates are driven not only by external cues related to the product but also by internal cues related to the purchase goal. Specifically, we show that pain of paying increases longevity expectations. The belief that a product will last longer could serve as a mitigating response for this negative reaction to spending. Moreover, because perceived freedom of spending is lower for utilitarian than hedonic purchases, exacerbating the pain of paying, consumers expect the former to last longer than the latter. Paradoxically, consumers dislike spending money more on the products they need the most.

This research contributes to two literature streams. First, we contribute to the literature on hedonic versus utilitarian purchase goals. Most relevant to our work is the research on hedonic adaptation that argues that hedonic consumption is relatively transient because most consumers easily adapt to enjoyment related benefits (Frederick and Loewenstein, 1999; Wang, Novemsky and Dhar, 2009). In addition, hedonic products are more susceptible to fashion trends (Grewal, Mehta, and Kardes 2004) because they have a higher emotional value (Hsee and Kunreuther 2000) which also makes them frail and transient. We offer an alternative explanation for these previous findings by linking the estimated longevity of a product with (the absence of) autonomy and the resulting (negative) affective reactions that arise during a purchase. Second, we contribute to the literature on pain of paying. Prior research has demonstrated individual differences in pain of paying (i.e., spendthrift/tightwad distinction; Rick, Cryder, and Loewenstein 2008) and differences associated with payment means (cash vs. credit card; Raghurir and Srivastava 2008). We extend this research by showing that the lack of autonomy in a given purchase context also increases pain of paying.

In addition, this research is relevant for salespeople trying to sell extended service contracts. The uncertainty about the longevity of a product can incite consumers to purchase an extended service contract. These additional warranties ensure that the product will last for

a given time. While these constitute only 3% to 4% of sales, they are responsible for 30% to 40% of profit (*Warranty Week 2005*). This article not only explains why extended service contracts are more frequently bought for hedonic products (Chen, Kalra, and Sun 2009) but also suggests that consumers may be more likely to buy them when their purchase decision feels more autonomous.

1. THE LIFETIME OF HEDONIC VERSUS UTILITARIAN PRODUCTS

Durable goods are not everlasting, and their usable lifetime ends after a certain time. From a consumer perspective, the life of a product ends when the product becomes absolutely or relatively obsolete (Cooper 2004). Absolute obsolescence occurs when the product becomes broken and beyond repair due to material degradation. Relative obsolescence occurs when a product becomes psychologically worn out because consumers' subjective aesthetical taste evolved and the product loses its attraction. It also occurs when manufacturers launch technological and/or fashionable upgrades. This article focuses on obsolescence estimates for hedonic and utilitarian purchases. While it does not seem farfetched to predict that hedonic versus utilitarian purchase goals predict estimates of relative obsolescence, we suggest that they also predict absolute obsolescence. In other words, we suggest that consumers assume that hedonic products break down sooner than utilitarian ones.

In general, hedonic products offer fun, pleasure, and excitement, while utilitarian products offer more practical and instrumental benefits (Hirschman and Holbrook 1982). Yet purchase contexts are often characterized by both utilitarian and hedonic considerations. Typical utilitarian products also possess hedonic attributes. For example, laundry detergents can be preferred for their cleaning abilities but also for their performance on a hedonic, olfactory dimension. Similarly, it is fun to drive a convertible, but considerations regarding utilitarian attributes (e.g., fuel consumption) are important as well. Thus, because products have both hedonic and utilitarian attributes, consumers' purchase goals determine which type of attributes receives attention (Chernev 2004). Approaching utilitarian versus hedonic consumption from a goal-based perspective allows us to understand when consumers will direct their attention to specific attributes (Alba and Williams 2013).

A hedonic versus utilitarian purchase motivation not only directs the focus to goal-relevant attributes but also entails a different kind of decision (Babin, Darden, and Griffin 1994; Dhar and Wertenbroch 2000; Hirschman and Holbrook 1982). Hedonic decisions are

affectively driven and inherently satisfying. For example, the main goal of hedonically motivated car drivers is to experience fun trips. With such a goal, driving a car is the essence of the usage experience. Conversely, utilitarian considerations entail a more distant benefit and serve a higher-order goal. For example, for transporting goods or people, a car offers a practical solution. As such, driving a car is not the intended goal, but rather a required step to resolve a transportation problem. Thus, utilitarian purchases do not appear for their own sake but rather serve as an intermediary act to meet a higher-order goal, while hedonic purchases are more terminally motivated.

This distinctive nature between hedonic and utilitarian purchase goals affects consumers' sense of autonomy (Botti and McGill 2011). Ryan and Deci (2000) argue that terminally motivated activities increase personal causality because they offer inherent satisfaction. Terminally motivated activities allow individuals to determine their own conduct and behavior. This contrasts with instrumentally motivated activities, which do not evoke personal causality because the reason for making the choice originates to some extent from an external problem. We propose that because hedonic purchases allow consumers to individually determine which products they want to buy, they should be awarded with a sense of autonomy. In contrast, because utilitarian purchases solve an external need rather than reflect an internal want, they should be associated with a low sense of autonomy. We posit that the (lack of) autonomy accompanied with a hedonic (utilitarian) purchase goal affects consumers' perceptions of a product's longevity.

2. LACK OF AUTONOMY

A sense of autonomy and being able to act as a causal agent are essential psychological needs that contribute to an individual's well-being (Ryan and Deci 2006). A sense of autonomy modulates emotions by reducing negative affect (Leotti, Iyengar, and Ochsner 2010). Failing to act as a causal agent causes depression (Mineka and Hendersen 1985) and mood disorders (Shapiro, Schwartz, and Astin 1996). Thus, experiencing a lack of autonomy in a purchase context should result in the experience of negative purchase-related emotions.

Normatively speaking, consumers should buy a product if the benefits of ownership exceed the amount of future benefits that must be sacrificed to finance the product. Yet opportunity costs are often not spontaneously considered when spending money (Frederick et al. 2009). Instead, consumers rely on their negative emotions in response to the prospect of

spending (Rick et al., 2008). When consumers experience too much negative emotions, they deter spending. Neuroscience research demonstrates that this visceral reaction activates the insula, a region that is also triggered when experiencing physical pain (Knutson et al. 2007). This so-called pain of paying allows consumers to control their spending behavior (Kivetz 1999; Prelec and Loewenstein 1998). However, sometimes consumers do not have the choice to deter spending. Some products are at a higher status in the hierarchy of needs and their purchase cannot easily be forestalled (Kivetz and Simonson 2002). We argue that the absence to autonomously decide to spend or not increases the pain of paying.

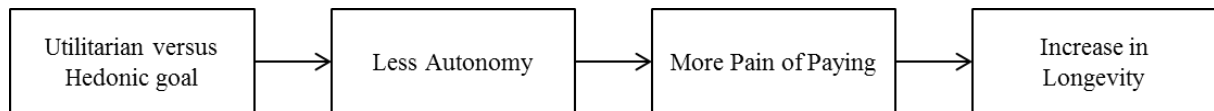
Not being able to autonomously decide to spend money and the resulting experience of negative emotions should have consequences for consumers' perceptions of a product's lifetime. Negative emotional reactions trigger responses that are designed to attenuate them and restore a homeostatic state (Gilbert et al. 2004). These defensive responses alleviate the psychological impact of negative events. As pain of paying is a negative affective reaction, consumers could develop alleviating responses to it, such as underestimating the likelihood or timing of a negative event (e.g., early replacement of a product). Prelec and Loewenstein (1998) argue that pain of paying interacts with the amount of anticipated utility. In particular, pain of paying is buffered by the scope of future utility. Consequently, believing that a product lasts longer when it hurts more to pay for it could serve to alleviate the pain of paying.

Believing that products last longer when their purchase causes more pain of paying is a defensive response that attenuates the unpleasant experience of paying. Kunda (1990) argues that people are sometimes motivated to believe what they want to believe and therefore rely on rules that support their desired conclusions. Kramer et al. (2012) find that suffering from by-products causes consumers to believe that they are buying better products. Inferring a longer lifespan from negative emotions experienced at the moment of purchase could serve as such an alleviating response.

We propose that utilitarian purchases evoke more pain of paying than hedonic ones and therefore induce consumers to believe that they will last longer. In general, it is harder to control or deter spending for utilitarian purchases (Botti and McGill 2011; Dhar and Wertenbroch 2000; Roy and Ng 2012). As argued, the inability to regulate spending behavior results in more pain of paying. Subsequently, consumers should experience more pain of paying in utilitarian purchase contexts. Several findings lend support to this idea. For example, Wakefield and Inman (2003) show that consumers are more sensitive to the amount of money they spend on utilitarian than hedonic products. Monetary promotions are also more

important in driving sales for utilitarian products (Chandon, Wansink, and Laurent 2000; Park and Mowen 2007). Because utilitarian purchases evoke more pain of paying by reducing consumers' sense of autonomy, we hypothesize that consumers believe that utilitarian products last longer than hedonic ones (see figure 1 for an overview of our hypotheses).

Figure 1. Conceptual model



3. STUDY OVERVIEW

We test our theory in four studies. In study 1, we examine the demand price in a real secondhand car market and find that hedonic cars devalue faster than utilitarian cars. This suggests that the estimated longevity of hedonic cars is shorter. In study 2, we show that a utilitarian purchase goal evokes more pain of paying, which in turn increases a product's estimated longevity. For the final two studies, we establish a causal chain analysis in which we separately manipulate each step of the explanatory mechanism (Spencer, Zanna, and Fong 2005). In study 3, we manipulate the perceived autonomy associated with a purchase decision and find that the lack of autonomy increases consumers' pain of paying. Study 4 manipulates pain of paying directly and shows that it leads to higher longevity estimates.

4. STUDY 1: SECONDHAND CAR MARKET

Consumers mentally decrease the value of a product over its estimated lifetime (Chu and Liao 2010; Okada 2001). The shorter the product lifetime, the steeper is the rate of depreciation. In this study, we draw on this connection between depreciation and estimated product lifetime to test whether hedonic products have a shorter estimated longevity than utilitarian ones. We obtained data from a large European website of secondhand cars (www.autoscout24.com) and examined the evolution of the demand prices of hedonic versus utilitarian cars. We hypothesize that the rate of depreciation is steeper for hedonic cars, in line with our expectation that they have a shorter estimated longevity.

Table 1. Overview of the cars

Make	Hedonic Model	Utilitarian Model
Volkswagen	Eos: sports car with a retractable hardtop	Transporter: light commercial vehicle
Mazda	MX: lightweight two-seater roadster	Mazda 2: three- or five-door hatchback or sedan
Peugeot	RCZ: sports coupé	5008: compact multipurpose vehicle
Mercedes-Benz	SLK: roadster with a retractable hardtop	Vito: van for cargo or passengers

We pretested the models to ensure that each pair contained one predominantly hedonic and one predominantly utilitarian model. To pretest the cars, the respondents (European sample, $n = 60$) first read a general description and saw pictures of either the hedonic or the utilitarian cars. Subsequently, we defined the difference between hedonic and utilitarian cars as follows: “People buy hedonic cars because they offer fun, pleasure and enjoyment. Utilitarian cars offer functional, instrumental and practical benefits.” The respondents then rated the models on their perceived hedonic (1 = very hedonic, 7 = very utilitarian) and fun (1 = very little fun, 7 = very much fun) dimensions. They rated the assumed hedonic cars as more hedonic ($M_{\text{hedonic}} = 2.56$ vs. $M_{\text{utilitarian}} = 5.20$; $F(1, 59) = 88.11$, $p < .001$) and as more fun to drive ($M_{\text{hedonic}} = 5.37$ vs. $M_{\text{utilitarian}} = 4.67$; $F(1, 59) = 13.64$, $p < .001$). In addition, the pairs of cars differed sufficiently within each brand on both dimensions.

After selecting the subset of cars, we obtained information on the different models by using the scraping extension offered by Google. In particular, we inventoried the price, age, and mileage for each car available on the website that belonged to the selected set. We use demand price of the cars as an indicator of value. In total, we gathered information on 1285 cars. We did not include cars older than 15 years in our sample because the older a car, the more unique and scarce a particular model becomes. Therefore, collectors’ value increases, and prices may rise again with increasing age. Because we do not aim to analyze the secondhand market for relatively old cars, we excluded them from the sample.

4.1 Results

We predicted the demand price of the cars through multivariate regression. Table 2 gives a descriptive overview of the variables in the model.

Table 2. Descriptive statistics

	Mean	SD	Frequency (%)	VIF
Price (euros)	14822.17	7556.48		
Mileage (KM)	81020.25	63462.07		2.27
Car's age (years)	5.20	3.82		2.86
<i>Type</i>				1.30
Utilitarian (ref. cat.)			672 (52%)	
Hedonic			613 (48%)	
<i>Make</i>				
Peugeot (ref. cat.)			317 (25%)	
Mercedes-Benz			491 (38%)	2.27
Mazda			234 (18%)	1.77
Volkswagen			243 (19%)	1.62

We tested our predictions in two models (see table 3). In the first model, we predicted the demand price of the car by the car's age, car type (hedonic or utilitarian), mileage, and brands. Because age and mileage are highly correlated ($r = 0.67$, $p < .001$), we first assessed multicollinearity by examining the variance inflation factors (VIFs; Hair et al. 2006). The VIFs ranged from 1.30 to 2.85. Given that the highest VIF is less than the standard cutoff of 5 (Hair et al. 2006), multicollinearity appears not to be an issue.

The first model explains 78% of the variance in demand price of the secondhand cars. It shows that the price of the secondhand cars drops with increasing age and mileage. In general, the hedonic cars cost more than the utilitarian ones. In addition, brand accounts for some of the variance in price.

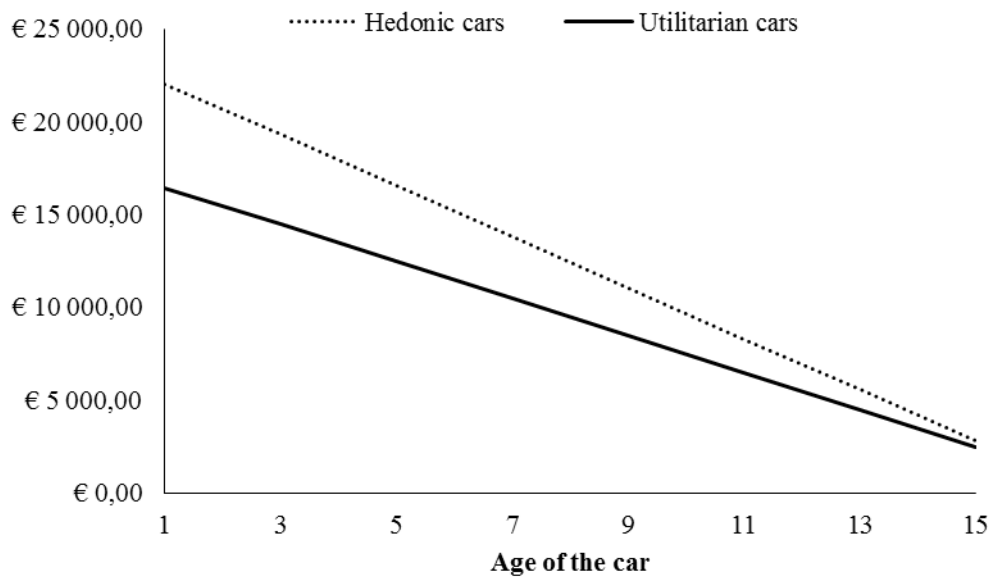
In the second model, we tested whether hedonic cars devalue faster than utilitarian ones. We examined this by adding an interaction effect between car age and car type (see figure 2). Our second model explains 79% of the variance in price and replicates the findings of our first model. More important, the interaction between car age and car type is significant. In particular, the negative relationship between age and price is more pronounced for the hedonic cars. This result provides support for our hypothesis that hedonic cars devalue faster than utilitarian ones.

Table 3. Predicting price

	<i>Model 1</i>			<i>Model 2</i>		
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>P</i>
Mileage	-0.03	0.01	< .001	-0.04	0.01	< .001
Car's age	-1301.98	43.37	< .001	-998.52	62.55	< .001
Hedonic car	5127.94	223.42	< .001	6837.69	338.68	< .001
<i>Make (ref. Peugeot)</i>						
Mercedes-Benz	4403.68	303.74	< .001	4170.77	300.81	< .001
Volkswagen	1664.95	317.93	< .001	1502.53	313.66	< .001
Mazda	-3460.03	336.99	< .001	-3732.53	333.921	< .001
Car's age × Hedonic				-376.56	56.76	< .001
Constant	20506.71	225.49	<.001	19852.48	242.74	<.001
	$R^2 = .78$			$R^2 = .79$		
	$F(6, 1278) = 779.09, p < .001$			$F(7, 1277) = 693.56, p < .001$		

NOTE.—All coefficients are unstandardized.

Figure 2. Type of car × Age of the car predicting price



NOTE. - Slopes are calculated at mean mileage (KM = 81020.25) and for reference make (Peugeot)

4.2 Discussion

Consumers mentally depreciate the initial purchase price of a product during ownership; the depreciation rate is related to estimated longevity, such that products with a shorter estimated longevity mentally devalue faster. We hypothesized that hedonic products would have a shorter longevity and tested this using observed depreciation in a secondhand car market. In support of our hypothesis, the price of hedonic cars drops faster than that of utilitarian ones, suggesting a longer longevity for the latter than for the former. Indeed, because consumers believe that hedonic cars last for a shorter time, they are willing to sell these vehicles for a smaller portion of the initial purchase price, compared with utilitarian cars.

Although study 1 provides support for our main hypothesis with real market data, it has several shortcomings. First, we did not actually measure the perceived longevity of the cars. Instead, we relied on the rate of change in demand price as a proxy measure. Second, we only had information about the demand price of the cars. Thus, we do not know how the selling processes further evolved: how much the sellers actually received or if they were able to sell the car at all. Third, the hedonic and utilitarian cars we selected may have differed in other aspects that could cause a difference in demand price. While our use of multiple pairs mitigates this possibility somewhat, we cannot rule it out entirely. The next three studies therefore use a lab experimental approach to replicate our initial findings and to further test our hypotheses.

5. STUDY 2: TEST OF THE FULL MODEL

The goal of study 2 is twofold. First, we want to test the proposed mechanism that utilitarian purchases reduce consumers' sense of autonomy, thereby evoking more pain of paying and, as a result, increasing perceived longevity of a product. Second, we propose that hedonic products not only become obsolete faster in an absolute sense but also are more likely to become obsolete faster in a relative sense because they are subject to fashionable upgrades, which also reduce their longevity (Grewal et al. 2004). To rule out that any observed difference in estimated longevity involves relative rather than absolute obsolescence, we control for susceptibility to trends.

5.1 Method

Ninety-six respondents ($M_{age} = 33$ years, 64 women) from an online panel of a European university participated in study 2. The respondents were instructed to imagine that they were buying a bike for either hedonic or utilitarian purposes. In the hedonic condition, respondents imagined that they were buying a bike to execute their hobby. In the utilitarian condition, they imagined that they were buying a bike to commute to their job. Buying a bike to cycle as a hobby is a terminally motivated purchase because riding is the goal. Buying a bike to commute is an intermediate purchase because the bike serves as a transportation device. In the hedonic condition, the respondents read the following instructions (translated version):

Recently you decided to take up cycling as a hobby. You always enjoyed making bike trips. You plan to make at least one enjoying trip every week. However, before you can start your new hobby you have to buy a bike. You decide to use this bike only to practice your hobby. The local bike dealer offers multiple models with different levels of quality. You decide to buy a midrange model of a well-known brand. Finally you can start practicing your hobby. You experience a lot of fun during your bike trips. You really like to ride with your bike.

In the utilitarian condition, the respondents read the following text (translated version):

Recently you started a new job. Your job is located in your hometown, but the place is difficult to reach by car or public transportation. You decide to go to work by bike. The only limitation that you encounter is that you do not own a bike. So, you decide to go to the local bike dealer. He offers multiple models with different levels of quality. You decide to buy a midrange model of a well-known brand. Finally you can get to work efficiently.

After reading the instructions, the respondents were asked to answer several questions. First, we measured longevity by asking, “How long do you think you could use the bike before having to dispose it?” (1 = very short, 9 = very long) and “When do you think you will need to replace the bike?” (1 = very late, 9 = very soon). This measure captures two sub decisions that affect the longevity of a durable good (Roster and Richins 2009). We reverse-coded the second item and averaged it with the first to obtain a measure of estimated product

life ($\alpha = .68$). Subsequently, we asked how much pain of paying the respondents would experience when paying for the bike (1 = not at all painful, 7 = very painful). To measure sense of autonomy, we asked if they would experience the purchase as something they wanted to do or as something they needed to do (1 = something I need to do, 7 = something I want to do). To control for susceptibility to fashionable product enhancements, we asked whether they would replace the bike when the manufacturer releases a new model (1 = definitely won't, 7 = definitely will). To check our manipulation, we offered a definition of hedonic versus utilitarian purchases and asked the respondents to rate the purchase (1 = very hedonic, 7 = very utilitarian) and to indicate how much fun they anticipated having with the bike (1 = very little fun, 7 = a lot of fun). In addition, we asked them how they felt (1 = very bad, 7 = very good), to control for the effect of mood on their longevity predictions (Schwarz and Clore 1996). Last, we measured affinity with the product (1 = definitely enjoy biking, 7 = definitely do not enjoy biking).

5.2 Results and Discussion

The manipulation was effective. The respondents rated buying a bike for leisure purposes as more hedonic than buying a bike to commute ($M_{\text{utilitarian}} = 5.49$ vs. $M_{\text{hedonic}} = 3.19$; $F(1, 95) = 71.43$, $p < .001$) and as more pleasurable ($M_{\text{utilitarian}} = 4.80$ vs. $M_{\text{hedonic}} = 5.38$; $F(1, 95) = 7.26$, $p < .01$). Across the conditions, all respondents equally liked to ride a bicycle ($M_{\text{utilitarian}} = 2.82$ vs. $M_{\text{hedonic}} = 2.96$; $F(1, 95) = 0.22$, $p = .64$), and no differences in mood occurred ($M_{\text{utilitarian}} = 5.08$ vs. $M_{\text{hedonic}} = 5.15$; $F(1, 95) = 0.10$, $p = .75$). More important, a utilitarian purchase goal increased the perceived longevity ($M_{\text{utilitarian}} = 7.21$ vs. $M_{\text{hedonic}} = 6.73$; $F(1, 95) = 4.42$, $p < .05$).

In accordance with the PROCESS mediation procedure (Preacher and Hayes 2008), we conducted different regression models (10,000 bootstrap resamples) to test the mediating processes in our model (see table 4). To begin, we tested whether differences in purchase goals affected the respondents' sense of autonomy. Indeed, buying a bike to commute restricted the sense of autonomy ($M_{\text{utilitarian}} = 4.24$ vs. $M_{\text{hedonic}} = 5.49$; $F(1, 95) = 17.75$, $p < .001$). As predicted, utilitarian purchases evoke less autonomy than hedonic ones.

Furthermore, an analysis of variance reveals that utilitarian purchases also evoke more pain of paying ($M_{\text{utilitarian}} = 3.55$ vs. $M_{\text{hedonic}} = 3.00$; $F(1, 95) = 4.62$, $p < .05$). A linear regression analysis predicting pain of paying by purchase goal and sense of autonomy

indicates that more autonomy reduces pain of paying. The partial correlation between purchase goal and pain of paying is no longer significant. This suggests that a higher (lower) sense of autonomy for hedonic (utilitarian) purchases explains a decrease (increase) in pain of paying. Accordingly, the indirect effect of autonomy is significant (95% CI: LL $-.94$; UL $-.34$; Sobel test $p < .001$).

Before testing the next step in the mediation process, we wanted to assess the influence of purchase goal on susceptibility to trends and to test whether the latter is related to pain of paying and/or sense of autonomy. The respondents indicated that they would more easily replace the hedonic bike upon the release of a fashionable upgrade ($M_{utilitarian} = 2.04$ vs. $M_{hedonic} = 2.77$; $F(1, 95) = 10.55, p < .01$). A regression analysis predicting susceptibility to trends by purchase goal, sense of autonomy, and pain of paying yields only significant results for purchase goal. The last step in the combined sequential and parallel mediation analysis is to test whether exacerbated pain of paying, due to a lack of autonomy, increases consumers' longevity estimates, regardless of a higher susceptibility to trends. The PROCESS mediation procedure by Preacher and Hayes (2008) does not allow testing models that combine sequential and parallel mediation. Hence, we used AMOS to estimate the relevant paths. Our model fitted the data well ($\chi^2/df = 0.74, p = 0.57, RMSEA = 0.00, CFI = 1.00$). A regression analysis predicting longevity by purchase goal, autonomy, pain of paying, and susceptibility to trends yields significant effects of pain of paying and susceptibility to trends. Moreover, pain of paying increases the longevity of a product, regardless of a reduction in the product's longevity, because of a higher susceptibility to trends. We report all direct effects in a path diagram (see figure 2).

Figure 2. Path Diagram

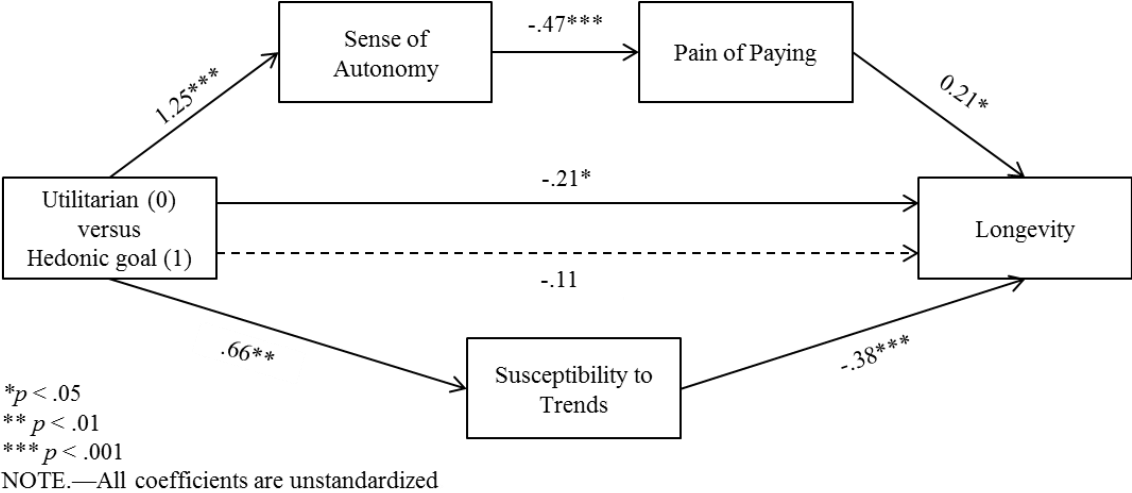


Table 3. Mediation Analysis

Predictor	Dependent variable											
	Autonomy			Pain of paying			Trends			Longevity		
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p
Hedonic purchase goal	1.25	0.29	<.001	0.04	0.24	.88	0.66	0.24	<.01	-0.12	0.23	.61
Autonomy				-0.47	0.08	<.001	-0.01	0.09	.81	0.02	0.09	.79
Pain of paying							-0.16	0.11	.14	0.21	0.10	=.04
Trends										-0.38	0.09	<.001
Constant	4.25	0.21	<.001	5.55	0.36	<.001	2.66	0.69	<.01	7.15	0.64	<.001
	R ² = 0.16			R ² = 0.33			R ² = 0.13			R ² = 0.26		
	F(1, 94) = 17.75, p < .001			F(2, 93) = 22.63, p < .001			F(3, 92) = 4.48, p < .01			F(4, 91) = 7.49, p < .001		

NOTE.—All coefficients are unstandardized.

Inspection of the indirect effects reveals that a utilitarian purchase goal reduces sense of autonomy, which increases pain of paying and therefore increases the longevity (95% CI: LL = $-.35$; UL = $-.06$). The indirect effect of purchase goal on estimated product life through sense of autonomy only (95% CI: LL = $-.35$; UL = $.13$) or through pain of paying only (95% CI: LL = $-.14$; UL = $.12$) is not significant. In addition, we compared our original model with a model in which we reversed the order of the two mediators. This analysis reveals that the Akaike information criterion (AIC) is better for the original path model ($AIC_{\text{original}} = 24.95$; $AIC_{\text{alternative}} = 41.19$). Pain of paying has no indirect effect through sense of autonomy on longevity. Consequently, our analysis reveals that the increase in longevity for utilitarian purchases is explained by a decrease in autonomy, which increases pain of paying. Last, the indirect effect of purchase goal through susceptibility to trends is also significant (95% CI: LL = $-.58$; UL = $-.05$). This means that hedonic products are more susceptible to trends, which also reduces their longevity. Importantly, the two reported mechanisms do not intervene with each other.

In summary, study 2 demonstrates that two separate mechanisms explain why consumers believe that utilitarian products last longer than hedonic ones. First, a utilitarian purchase goal reduces the sense of autonomy and thereby increases pain of paying, which in turn extends the longevity of a product. Second, though not the focus of this article, we find that the longevity of hedonic products is shorter because these kinds of products are more susceptible to fashionable upgrades. In study 2, we rely heavily on traditional mediation analyses; however, this type of analysis exhibits some major weaknesses (Spencer et al. 2005). First, the relationship between the mediating variables and the dependent variable is in essence correlational, and causation is only assumed. Because we did not manipulate sense of autonomy or pain of paying, we did not directly establish their causal roles in longevity estimates. Second, psychological processes are often difficult to measure because doing so may intervene with the process. Consequently, it is often difficult to argue that the proposed psychological process is measured correctly.

The drawbacks of a mediation design are easy to counter by executing a causal chain analysis (Spencer et al. 2005). A causal chain analysis comprises a series of experiments in which the mediating processes are manipulated separately. By manipulating the underlying processes, causal inferences can be made with more confidence. This also solves the measurement problem. To confirm that the proposed psychological processes lie at the heart of the differences in longevity for hedonic versus utilitarian purchases, we present a causal chain analysis in our next two studies.

6. STUDY 3: MANIPULATING AUTONOMY

In study 2, we provided process evidence through a sequential mediation analysis. In study 3, we zoom in on one aspect of this mediation sequence and manipulate sense of autonomy, the first proposed mediator in the process. Doing so allows us to examine the causal role of the sense of autonomy in pain of paying and longevity estimates. To eliminate any confounds with type of purchase goal (e.g., susceptibility to trends), we keep the goal constant.

6.1 Method

We recruited 68 respondents ($M_{\text{age}} = 34$ years, 51 women) from an online panel of a European university. All respondents were asked to imagine that they enjoy taking pictures in their spare time, prefer to do so with up-to-date equipment, and were buying a new camera. We used the same two measures for longevity as in study 2 ($\alpha = .68$). The respondents imagined that they were buying a new camera either because they wanted it or because their previous one was stolen. Theft happens beyond one's control and therefore should force consumers to spend money on new equipment to be able to execute their hobby. A pretest confirmed that replacement due to theft reduces the sense of autonomy because it forces people to spend money they otherwise would not ($F(1, 54) = 10.26, p < .01$). The respondents in the voluntary (obligatory) spending condition read the following instructions (translated version):

Try to imagine that you enjoy taking pictures and photography is your hobby. In order to execute your hobby, you like to have proper equipment. You are aware of recent developments and like to know what the market offers. Now and then you sell your old equipment in order to buy new equipment. Recently you decided to buy a new camera. (Recently you had to buy a new camera because your previous one was stolen.) The local dealer offers a range of models. You decide to buy the Obscura, a recent model of a well-known brand. The camera offers a lot of fun while executing your hobby.

In addition to estimated duration of product life, we asked the respondents how painful it would be to pay for the camera (1 = not at all painful, 7 = very painful) and measured two potential confounds: mood (1 = very bad, 7 = very good) and affinity with the product (1 = definitely like taking pictures, 7 = definitely do not like taking pictures). Furthermore, we provided a definition of hedonic versus utilitarian products and asked the respondents to identify the purchase goal (1 = very hedonic; 7 = very utilitarian). We wanted to keep purchase goal constant across the conditions to eliminate any potential confounds.

6.2 Results and Discussion

Respondents from both conditions ($M_{\text{theft}} = 2.60$ vs. $M_{\text{want}} = 2.57$) equally liked to take pictures ($F(1, 67) = 0.04, p = .84$), reported a similar mood ($M_{\text{theft}} = 4.91$ vs. $M_{\text{want}} = 5.26$; $F(1, 67) = 1.42, p = .24$), and rated the purchase goal as rather hedonic ($M_{\text{theft}} = 2.88$ vs. $M_{\text{want}} = 2.71$; $F(1, 67) = 0.25, p = .62$). Replacing a stolen camera, instead of voluntarily replacing it, urges consumers to believe that the new camera will last longer ($M_{\text{theft}} = 6.55$ vs. $M_{\text{want}} = 5.88$; $F(1, 67) = 5.76, p < .05$). The reduction of autonomy thus leads to an increase in longevity. Replacing the stolen camera also causes more pain of paying ($M_{\text{theft}} = 5.61$ vs. $M_{\text{want}} = 3.00$; $F(1, 67) = 62.47, p < .001$).

To test whether negative affective reactions to spending (i.e., pain of paying) account for an increase in longevity, we conducted a mediation analysis (Preacher and Hayes 2008). This analysis, with 10,000 bootstrap resamples, reveals a significant Sobel test ($p < .05$). When we control for pain of paying, the direct effect of sense of autonomy disappears ($t(68) = -0.32, p = .75$), and pain of paying turns out to be a better predictor ($t(68) = 2.14, p < .05$). Pain of paying fully mediates the total effect of sense of autonomy on longevity: the direct effect was not significant (95% CI: LL = $-.85$; UL = $.64$), but the indirect effect was (95% CI: LL = -1.23 ; UL = $-.01$).

In general, study 3 offers evidence that lack of autonomy increases pain of paying and, consequently, increases the longevity of a product. Study 3 contributes by manipulating rather than merely measuring autonomy; doing so better establishes the causal role of perceived autonomy in the proposed mechanism. Moreover, study 3 demonstrates that pain of paying differs not only by purchase goal. Indeed, we show that pain of paying is affected by a sense of autonomy, which differs across several purchase contexts. In this study, replacement for

external reasons (i.e., theft) decreases consumers' sense of autonomy in the purchase and even causes a hedonic purchase to be viewed as less autonomous.

Although study 3 establishes the causal role of lack of autonomy, we did not manipulate pain of paying. Consequently, we infer its causal role from correlational evidence. Study 4 aims to provide stronger evidence for the causal role of pain of paying in longevity estimates.

7. STUDY 4: MANIPULATING PAIN OF PAYING

In study 4, we strive to find more definite support for the idea that negative affective reactions to spending increases consumers' estimates of a product's longevity. To do so, we directly manipulate pain of paying. Prior research has shown that negative affective reactions to spending differ across different methods of payment (Prelec and Loewenstein 1998). In particular, the more the transfer of money becomes salient, the more consumers experience pain of paying. For example, the transfer of money is less salient when paying with a credit card than when paying with cash because the link between the purchase decision and the actual parting of money is less evident (Raghubir and Srivastava 2008). Because paying with cash causes more pain of paying, we propose that this method of payment should also increase consumers' perceptions of longevity.

7.1 Method

In total, 144 U.S. residents ($M_{\text{age}} = 29$ years, 53 women) were recruited through Amazon Mechanical Turk. All respondents received \$.10 for their participation. In the first part of the study, the respondents were instructed to imagine that they were buying a new jacket. To manipulate pain of paying, they either paid in cash or used a credit card. To distract their attention away from the method of payment, we framed it as a choice task. In the cash condition, the respondents had to select different denominations (\$10 and \$20 bills). In the credit card condition, they chose one of two credit cards with which to pay (MasterCard or Visa).

The respondents in the cash (credit card) condition read the following instructions:

You have decided to go to the local mall to buy a new jacket. After browsing different stores you find a jacket that fits. The jacket costs \$89.00. Next to the store there is an ATM. You decide to withdraw cash, so you can pay for the jacket. (You have two credit cards with you. Which card will you use to buy the jacket?)

After the respondents read the scenario, we measured estimated product life ($\alpha = .76$). To control for price–quality inferences and mood, we asked them if \$89.00 would be an appropriate price for a jacket (1 = very inappropriate, 7 = very appropriate) and how they felt at the moment (1 = very bad, 7 = very good).

7.2 Results and Discussion

Neither price perceptions ($M_{\text{cash}} = 4.44$ vs. $M_{\text{credit card}} = 4.44$; $F(1, 143) = 0.00$, $p = .99$) nor mood ($M_{\text{cash}} = 6.55$ vs. $M_{\text{credit card}} = 5.88$; $F(1, 143) = 2.39$, $p = .12$) differed across conditions. However, the respondents in the cash condition estimated that the jacket would last longer ($M_{\text{cash}} = 7.90$ vs. $M_{\text{credit card}} = 7.24$; $F(1, 143) = 6.94$, $p < .01$). Thus, using the most painful method of payment causes the respondents to believe that the jacket lasts longer.

8. DISCUSSIONS AND CONCLUSIONS

The longevity of a product is an unobservable attribute at the moment of purchase. In general, consumers use external cues to infer unobservable product attributes (Kirmani and Rao 2000). This article shows that internal cues also affect inferences about product longevity. We show that consumers believe that a product will last longer when they experience more pain of paying when purchasing it. Presumably, a higher life expectancy compensates for the negative affect and restores a homeostatic state. Moreover, we argue that this pain of paying is related to the purchase goal. As utilitarian purchases are obligatory, instrumental steps to solve a practical problem, they are associated with little autonomy and with a higher pain of paying than hedonic products. Correspondingly, consumers believe that utilitarian products last longer than hedonic ones.

With study 1, we provided preliminary evidence for the hypothesis that utilitarian cars are expected to last longer. Analysis of real market data shows that hedonic cars devalue faster than utilitarian ones. In this study, the rate of depreciation served as a proxy of the cars' longevity. Furthermore, study 1 differs from the other studies because it involves goods that people already possess. The endowment effect (Thaler 1980) asserts that people ascribe a higher value to possessions, and this effect may be an important confound. An alternative explanation for the current findings would be if car owners systematically overvalue their utilitarian vehicles than their hedonic ones. Yet consumers attach more value to hedonic products in situations of forfeiture (Dhar and Wertenbroch 2000). Thus, it is more likely that the sellers of hedonic cars overvalue their vehicles. If so, hedonic cars may devalue even faster than assumed.

Study 2 demonstrated evidence for our full model. We found that the respondents expected utilitarian bikes to last longer than hedonic ones because these bikes are associated with a higher pain of paying. Furthermore, sense of autonomy mediated the effect of purchase goal on pain of paying. Believing that a utilitarian product lasts longer may possibly alleviate the negative affect experienced at the moment of purchase because of a reduced sense of autonomy. In addition, study 2 showed that this compensatory reaction operates independently of fashion obsolescence. Studies 3 and 4 further corroborate the proposed mechanism by establishing a causal chain analysis, in which we manipulated each variable of the mediating process separately.

In general, we offer additional insight into how consumers form their longevity estimates at the moment of purchase. Up to now, this process has not been examined. Prior research suggests that *ex ante* assessments of unobserved features (e.g., longevity) rely on external cues (Kirmani and Rao 2000). We show that an internal cue—namely, pain of paying—also affects such assessments. The finding that pain of paying is relevant for *ex ante* assessments is in accordance with research that documents the psychological impact of negative visceral reactions (Gilbert et al. 2004). We propose that prolonged estimated longevity caused by exacerbated pain of paying is a compensatory reaction in response to pain of paying. It is also a self-serving conclusion because it justifies the amount of resources spent. Research on motivated cognition demonstrates that people often draw self-serving conclusions to fit their goals (Kunda 1990). Believing that a utilitarian product lasts longer not only justifies the pain of paying but also is in accordance with the long-term objectives inherent to utilitarian purchase goals (Alba and Williams 2013).

However, hedonic products may be more sophisticated and have more additional options that could breakdown. In addition, hedonic products may be used more intense. Wear and tear could thus be higher for hedonic products, hence offering an alternative explanation for our documented effects. Yet, similar arguments are possible for utilitarian products. Wear and tear could also be higher for utilitarian products because these products are more frequently used (e.g., utilitarian bike to commute daily vs. hedonic leisure bike). Consequently additional research is needed to disentangle the effects of (anticipatory) wear and tear on the expected lifetime of a product.

We also want to highlight the potential importance of pain of paying for the so-called process of hedonic adaptation. The thrill of having a new enjoyable product eventually fades away (Frederick and Loewenstein 1999). It could be difficult for consumers to predict the exact timing of this hedonic fallback, but they have some intuitive beliefs about it (Wang et al. 2009). Indeed, our results confirm that the anticipated utility of hedonic products is relatively transient. More importantly, we contribute to the literature by suggesting that pain of paying could be a previously unknown antecedent in understanding the process of hedonic adaptation. Our research shows that pain of paying urges consumers to anticipate more utility and therefore could slow down the rate of hedonic adaptation.

Related to this issue are the recent findings of Besharat, Varki and Craig (forthcoming) on debt management. They demonstrate that consumers may want to match incurred costs with anticipated benefits and thus prioritize hedonic debts because hedonic products are expected to offer only temporarily benefits. Hence, *ex ante* estimates of anticipated utility could have *ex post* consequences for the experience of pain of (re)paying and debt management in general. At the moment of purchase, utilitarian purchases evoke more pain of paying because of a reduction in autonomy and subsequently increases longevity estimates. After the purchase, hedonic debts cause more pain of (re)paying because paying off a product that is expected to last for a shorter period of time makes it more difficult to match the costs and benefits of a product (Besharat et al. forthcoming).

Attributing a longer life to utilitarian products because they evoke more pain of paying presumably is a defensive psychological reaction. Perhaps underestimating the longevity (or overestimating the likelihood of failure) of hedonic products is also a form of self-protective behavior. The breakdown of a good involves the forfeiture of one's possession. Situations of forfeiture are unpleasant and have a significant, negative emotional impact (Kahneman, Knetsch, and Thaler 1990). In general, individuals assign a higher probability to the occurrence of negative events because they want to protect themselves against decisions

based on an underestimate (Harris and Corner 2011; Harris, Corner, and Hahn 2009). Consequently, consumers should believe that products last for a shorter time than they actually do (Huysentruyt and Read 2010). The tendency to overestimate the occurrence of negative events is a function of the severity of its consequences (Harris, Corner, and Hahn 2009). Hedonic products have a high emotional value that gives the product meaning and prompts attachment (Hsee and Kunreuther 2000). Thus, the forfeiture of a hedonic product is more painful than that of utilitarian products (Chen et al. 2009; Dhar and Wertenbroch 2000). As subjective probability estimates are a function of the severity of the consequences, consumers should ascribe higher probabilities to the breakdown of hedonic products. Indeed, throughout our studies we found that the longevity estimates were shorter for hedonic products. Consequently, underestimating the longevity of a hedonic product could also be a self-protective measure against misjudging the proximate breakdown of a highly valued hedonic product. Still, additional research is required to examine this speculation in depth.

We argued that a biased set of cognitive processes and strategies underlies the formation of longevity estimates of a product. However, if consumers are worried that the product will not last for a significant amount of time, they can insure the product by purchasing an extended service contract. These insurance services are offered by manufacturers and are highly profitable (*Warranty Week 2005*). The high profit margin on extended service contracts suggests that these contracts are often overrated by consumers. In general, consumers buy them to acquire peace of mind (Hsee and Kunreuther 2000) and when they are risk averse (Chen et al. 2009). Our model suggests that the mental categorization of a product could affect the purchase of extended service contracts. In particular, categorizing a product as hedonic (utilitarian) could increase (decrease) the likelihood of purchasing an extended service contract. First, hedonic products are expected to last for a shorter time. The purchase of an extended service contract could increase the estimated longevity. Second, hedonic products cause less pain of paying. Spending additional money on optional services is more likely to occur when experiencing a fair level of pain of paying. Thus, retailers could potentially increase the sale of extended service contracts by stressing the hedonic attributes more than the utilitarian ones. Similarly, less painful methods of payment (e.g., credit card) could increase the likelihood of buying an extended service contract. Conversely, more painful methods of payment (e.g., cash) should decrease the likelihood of purchasing an extended service contract because consumers more easily believe that they already paid enough for the main product.

This research also contributes to the literature on autonomy and suggests some managerial implications. Research has amply demonstrated that sense of autonomy is important for an individual's well-being and that the lack of it evokes negative emotions (Ryan and Deci 2006; Leotti et al. 2010). Prior research acknowledges that a hedonic (utilitarian) purchase goal increases (reduces) consumers' autonomy and ability to express own preferences, which inflates (deflates) satisfaction (Botti and McGill 2011). We show that this lack of autonomy experienced in utilitarian purchase contexts also evokes more pain of paying. Anticipatory pain of paying inhibits spending (Rick et al. 2008). Consequently, the likelihood of purchasing an extended service contract should drop when consumers are not able to express their own values and preferences. In addition, consumers with a utilitarian purchase goal should be more price sensitive than hedonic shoppers.

We argued that hedonic purchases allow consumers to express their own values and preferences and therefore evoke a sense of autonomy, which reduces the pain of paying. Yet hedonic purchases could also emanate from a force external to the self. As study 3 shows, consumers may buy hedonic products because of external pressures. Theft occurs beyond consumers own will and enforces the replacement of a (hedonic) product. Similarly, group values and norms (Cooper 2004) or the unexpected breakdown of a product could drive purchase behavior (Grewal et al. 2004). In the presence of such an external force, hedonic purchases acquire an enforced undertone that reduces a sense of autonomy. Thus, the presence or absence of external forces is associated with differences in pain of paying and longevity estimates within hedonic purchases. In addition to the presence or absence of external forces, affective reactions related to guilt could be related to the experience of pain of paying in hedonic purchase contexts (Rick et al. 2008).

Hedonic purchase situations are usually seen as an opportunity to express preferences and desires. Spending money is thus perceived as more positive in such a situation. Utilitarian purchase situations are not interpreted as an opportunity, but rather as a limitation because it can force consumers to spend money. Hedonic versus utilitarian consumption is broad conceptualization that encompasses several purchase contexts with a vast array of variable attributes. Some other forces can also intervene. Autonomy is assumed to be connected with hedonic (but not utilitarian) purchase situations, but the experience of autonomy can also vary within these purchase contexts. The goal of our second study, was to manipulate feelings of autonomy. While focusing on this difference, we might have overseen or neglected the variance of autonomy in utilitarian situations. At worst, the manipulation of study 2 could be considered as a manipulation of autonomy rather than hedonic versus utilitarian. Hence, our

manipulation of hedonic versus utilitarian purchase contexts may not be representative for all hedonic versus utilitarian situations, which may impose a serious limitation on the generalizability of our current findings. Hedonic purchases could evoke guilt because they are sometimes wasteful and irresponsible. Guilt should be positively correlated with pain of paying (Rick et al. 2008). Guilt for hedonic purchases originates from choosing hedonic products (vice) over utilitarian products (virtue) in a temporal proximal setting (Kivetz and Simonson 2002; Kivetz and Zheng 2006; Okada 2005). The absence of a utilitarian alternative reduces guilt, and the absence of hedonic alternatives gives rise to feelings of missed pleasure and evokes regret (Kivetz and Keinan 2006). In our studies, the respondents were never confronted with discretionary choices in which they could opt for a hedonic or a utilitarian alternative. Thus, guilt likely did not affect our result, which is supported by our failure to find any mood differences.

Still, the idea that guilt may also affect pain of paying and longevity estimates has some merit. To test this, we asked 117 U.S. residents through Amazon Mechanical Turk ($M_{\text{age}} = 30$ years, 84 men, \$.15 remuneration) to imagine that they were purchasing a new laptop to play games, chat, and listen to music. In the first condition, they bought the laptop but had to forestall the repair of their car and therefore were confronted with a practical transportation problem. In the other condition, there was no conflict between the hedonic purchase and a practical problem. Subsequently, we asked how guilty the respondents would feel (1 = definitely will not, 7 = definitely will) and how much pain of paying they would experience (1 = not at all painful, 7 = very painful) and let them estimate the longevity of the laptop (see studies 2, 3, and 4; $\alpha = .61$). Putting pleasure before the practical transportation problem was an effective way to manipulate guilt ($M_{\text{hedonic}} = 2.62$ vs. $M_{\text{conflict}} = 5.47$; $F(1, 116) = 123.19$, $p < .001$). When the respondents' short-term hedonic interests conflicted with their long-term utilitarian interests, they expected to experience more pain of paying ($M_{\text{hedonic}} = 4.43$ vs. $M_{\text{conflict}} = 5.03$; $F(1, 116) = 5.35$, $p < .05$) and estimated that the laptop would last longer ($M_{\text{hedonic}} = 5.12$ vs. $M_{\text{conflict}} = 5.78$; $F(1, 116) = 8.43$, $p < .01$). Furthermore, pain of paying mediates the longevity estimates (95% CI with 10,000 bootstrap resamples: LL = $-.39$; UL = $-.05$; Sobel test: $p < .05$). In summary, any factor that increases pain of paying for a hedonic product, either an external force that reduces one's sense of autonomy or a conflict with a long-term goal that elicits guilt, should increase longevity estimates for the product involved.

This research demonstrated that consumers infer the longevity of a product from the pain of paying they experience at the moment of purchase. Further research should focus on how consumers infer other unobservable attributes from pain of paying. For example, buyers are

often uncertain about the general quality of the product provided by sellers (Kirmani and Rao 2000). Pain of paying could influence how consumers *ex ante* estimate unobservable quality. In addition, pain of paying (and reduced autonomy) could make consumers more aware that they are spending money, which makes them more demanding and also could affect their *ex post* evaluations.

ON BECOMING FRUGAL:
THREAT TO PERSONAL CONTROL
CAN MAKE SPENDTHRIFTS ACT
LIKE TIGHTWADS

CHAPTER III: ON BECOMING FRUGAL: THREAT TO PERSONAL CONTROL CAN MAKE SPENDTHRIFTS ACT LIKE TIGHTWADS

Consumer overspending is a serious social ill (Schorr 1998). The evidence is staggering: Personal credit card debt has doubled in the past four years. Personal bankruptcies are at a historical high. Average individual spending has increased about 30% in the last 25 years. Research has attributed some of this to the inability of some consumers to inhibit their spending behavior (Wilcox, Block, and Eisenstein 2011). Spending more than one actually possesses, and reckless spending behavior in general, has been tied to dispositional differences (Rick, Cryder, and Loewenstein 2008; Rick and Loewenstein 2008; Rick, Small, and Finkel 2011). So-called spendthrifts impulsively spend money, save less and are responsible for a substantial amount of credit card debt. Tightwads on the other hand, tend to contemplate whether to buy something or not and typically spend less (Kivetz and Keinan 2006).

Clearly, while personality traits can drive individual differences in spending behavior, prior research has established that situational factors can curb or even override their impact. Ironically, despite the problem of overspending, prior research has successfully demonstrated how to make tightwads act like spendthrifts by diminishing the pain of payment. For instance, paying with a credit card instead of cash (Raghubir and Srivastava 2008) or with small instead of large currency denominations (Raghubir and Srivastava 2009) makes the transfer of money less salient and causes tightwads to spend more. In addition, framing a cost as small makes it easier for tightwads to spend and thus reduced spending differences (Rick et al. 2008). The current paper attempts to understand the role of situational factors in diminishing – even reversing – spendthrift behavior, to identify how to get spendthrifts to act more like tightwads.

Prior research has demonstrated that spendthrifts exhibit a unique psychology. Spendthrifts tend to act impulsively and are more likely than tightwads to succumb to transient desires (Frederick et al. 2009; Haws, Bearden, and Nenkov 2011; Haws and Poynor 2008; Lynch et al. 2010). Acting on impulse presupposes the freedom to do so, or the absence of predetermined rules of conduct (Baumeister 2002; Patrick, Curtin, and Tellegen 2002; Vohs and Faber 2007). But how would spendthrifts react if their assumption of situational control is questioned or their sense of personal control threatened? Up until now, no research has considered the importance of personal control and the feeling of autonomy this affords spendthrifts as a key driver of spendthrift behavior. This is the focus of the current work. We

aim to demonstrate that a situationally induced threat to personal control profoundly influences a spendthrift's feelings of autonomy resulting in a decreased willingness to spend as they typically would.

We present a set of three studies to shed light on this issue. In study 1, we demonstrate the basic effect to show that a threat to personal control lowers spendthrifts' willingness to spend money on pleasurable things. In study 2, we demonstrate the role of consumption context: spendthrifts were less willing to spend when they were required to solve a practical problem than when they consumed out of their own volition. In study 3, we illustrate that reduced personal control diminished feelings of autonomy, which mediated the willingness to spend. In general, our empirical evidence supports the idea that spendthrifts' willingness to spend is hampered when personal control is threatened.

The current findings yield several contributions. First, we contribute to the literature on spendthrifts (Rick et al. 2008, 2011; Rick and Loewenstein 2008) by introducing personal control as a moderator. By doing so, we present evidence that refutes the common assumption that spendthrifts *always* spend more than tightwads. Second, we also expand knowledge on how feelings of autonomy – or the lack thereof – affect (spending) behavior. Autonomy has been associated with a vast range of benefits (Leotti, Iyengar, and Ochsner 2010; Mineka and Hendersen, 1985; Ryan and Deci 2006; Shapiro, Schwartz, and Astin 1996; see Chen and Sengupta 2014 for a notable exception), but in our research feelings of autonomy help explain why spendthrifts spend, not necessarily always a good thing. Finally, our results suggest some important downstream consequences for spendthrifts' debt management and overall subjective well-being. First and foremost, our findings bring to mind that spendthrifts mostly overspend when having the freedom to choose. A possible option to reduce spendthrifts' spending could be to help them understand their own behavior. Second, overspending may cause financial worries, but since spendthrifts act on the basis of their desires, they tend to act thrifty when it comes to practical products. Economizing on instrumental consumption could contribute to increased experiences of everyday hassles and annoyances which is detrimental for subjective well-being. The optimal advice for spendthrifts is thus to limit their pleasurable purchases, but not to economize on practical products.

The remainder of the paper is organized as follows. First we review the extant literature on tightwads versus spendthrifts with a focus on the unique psychology underlying these traits. Next, we review the literature on personal control and present our arguments for how threat to personal control can curtail spendthrifts' spending tendencies. Relatedly, we propose that diminished feelings of autonomy mediates this effect. We present a set of three studies in

which personal control is manipulated in different ways to demonstrate the effect on spendthrift behavior. We conclude with a discussion of our findings, implications for marketers and policy makers and directions for future research in this domain of investigation.

1. TIGHTWADS VERSUS SPENDTHRIFTS

Normatively speaking, consumers should buy a product if the benefits of ownership outweigh all the future benefits associated with refraining from the purchase; the latter not only include the monetary cost but also the utility associated with the next best use of that cost. However, opportunity costs are not always considered spontaneously when spending money (Frederick et al. 2009). Instead, a substantial body of literature argues that consumers rely on their negative emotions in response to the prospect of spending (Prelec and Loewenstein 1998), or, the pain of payment. When consumers anticipate/experience negative emotions, spending is deterred. Neuroscience research demonstrates that such negative affective reactions activate the insula, a brain region which is also triggered when experiencing physical pain (Knutson et al. 2007). Consumers' spending behavior is thus regulated by affective reactions towards payment rather than by rational comparisons of costs and benefits (Kivetz 1999; Prelec and Loewenstein 1998).

Although purchase decisions are contingent upon the pain associated with the cost, research has also shown that the same dollar amount can evoke different affective reactions in different people. In other words, sensitivity to the pain of payment is an individual difference that helps predict (over) spending tendencies (Rick et al. 2008). Spendthrifts are individuals who are less sensitive to the pain of paying leading them to spend money more easily. Tightwads, on the other hand, are more sensitive to the pain of payment that hampers their willingness to spend money.

Accompanying the sensitivity to the pain of payment is a host of factors that underlies the unique psychology of spendthrifts versus tightwads. Several findings suggest that spendthrifts act on the assumption of autonomy and freedom from constraints, making them less likely to consider opportunity costs (Frederick et al. 2009). Spendthrifts do not like to plan things in advance (Lynch et al. 2010) and care less about longer term consequences of behavior (Haws and Poynor 2008). Indeed, in accordance with their tendency to act without restraint, spendthrifts more easily engage in impulsive purchase behavior (Rick et al. 2008) and are low in self-control (Haws et al. 2011). Since, impulsive purchases occur unintentionally and

unplanned (Baumeister 2002) they mirror a free, unreflective desire to buy without thoughtful considerations (Vohs and Faber 2007). Spendthrifts, unlike tightwads, are more likely to respond to transient desires to fulfill the pleasure of consumption, rather than consider the pain of payment. These findings paint a more complete picture of the psychological make-up of a spendthrift versus a tightwad.

Armed with the knowledge of this unique psychology, it might therefore be possible to alter situational factors to shift the general tendencies of tightwads and spendthrifts. Indeed, previous research has done just that. Prior research has shown that by making the pain of payment less salient, tightwads start increasing their willingness to spend. For instance, framing an expense as small reduced the pain paying for tightwads and prompts their willingness to spend money (Rick et al. 2008). In a similar vein, paying with credit card instead of cash (Raghubir and Srivastava 2008) or with small instead of large denominations (Raghubir and Srivastava 2009) makes the transfer of money less salient, reduces the pain of paying and causes tightwads to spend more.

We build on this interactionist perspective, to identify how to leverage the unique spendthrift psychology to get spendthrifts to act more like tightwads. Overall, there is substantial evidence to suggest that spendthrifts' unconstrained spending pattern reflects a tendency to behave autonomously and freely. If spendthrifts are inclined to act without (external) limitations, the incapacity to do so should discourage them to spend money. We therefore predict that a situationally induced threat to personal control could be the key to reducing spendthrifts' spending behavior.

2. PERSONAL CONTROL AND FEELINGS OF AUTONOMY

Personal control refers to the extent to which individuals are able to determine situational outcomes. When a given situation allows individuals to intentionally produce desired, or prevent undesired, outcomes, high personal control is experienced (Skinner, Michael, and Baltes 1988). On the other hand, if individuals believe that their actions do not affect situational outcomes, they experience low personal control (Glass and Carver 1980). Several external forces can interrupt and threaten individuals' perception of personal control (Langer 1975). While major events such as natural disasters, horrific acts of violence or social turmoil curtail personal control, situationally induced threats to personal control also take place in more mundane settings (Chae and Zhu 2014; Cutright 2012). For instance, a disorderly office,

being stuck in a traffic jam, accidental product failure or the interference of salespeople, are all situations that can induce the perception of threat to personal control.

Personal control is generally considered an important human need (Kelly 1955; White 1959) and its experience offers several psychological benefits (Brandstadter and Baltes-Gotz 1993). When individuals have a grip on the situation they become more confident (Miller 1979), experience less negative emotions (Leotti, Iyengar, and Ochsner 2010) and believe that they are more competent (Langer 1975). Because personal control helps determine the outcome of a situation, it empowers individuals to express their own wishes and desires. Personal control offers the freedom to express inner desires and choose personally valued alternatives. This sense of freedom, referred to as subjective vitality, can make people feel enthusiastic, alive and psychologically energized (Chen and Sengupta 2014; Ryan and Deci 2001; Ryan and Frederick 1997). Such energizing effects are activated when individuals are able to freely express their own choices, wishes and desires. This freedom of action is generally understood as autonomy (Deci and Ryan 1985; deCharms 1968; Ryan and Deci 2000).

Personal control and autonomy are conceptually distinct, but related. The ability to act autonomously, or to express inner desires, presupposes the possibility to determine situational outcomes. For example, participating in your preferred training program at the gym presupposes that you are personally able to determine your choice. The positive feelings of autonomy can be conceptualized as a byproduct of personal control, consequently threats to personal control impede feelings of autonomy. For example: if you are assigned (as opposed to being able to choose) a training program, you are not able to determine situational outcomes and thus the situation has threatened your sense of personal control and influenced your feelings of autonomy.

Personal control is a requirement for autonomy and therefore closely related to it. Still, feelings of autonomy can also be experienced in low control settings. For example, Chen & Sengupta (2014) observed increased feelings of autonomy when being forced to do something bad (consumption of vices). Being forced to do something bad instead of freely choosing it increased feelings of autonomy because it reduced the guiltiness associated with the act. Although personal control and autonomy tend to be closely related to one another, some notable exceptions exist and it is possible to experience autonomy in low control situations. Similarly, high control does not always lead to the experience of autonomy. Botti, Orfali and Iyengar (2009) showed that people are less likely to benefit from positive psychological energy when having control over tragic choice alternatives. Lastly, some research suggests

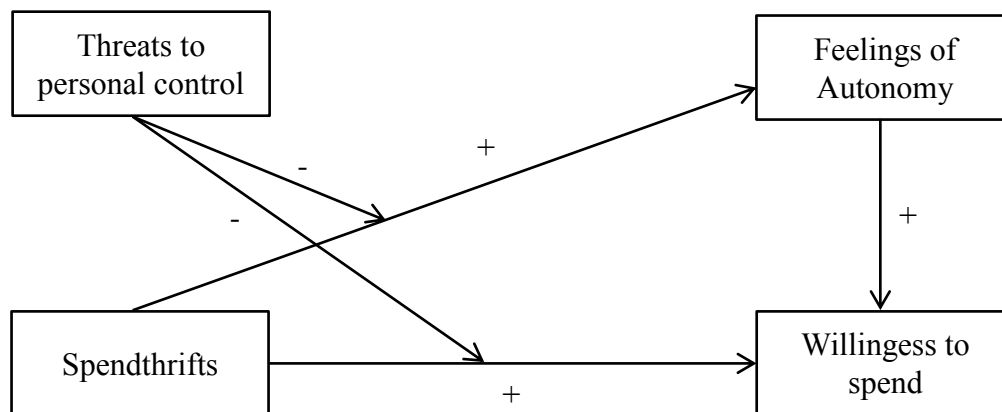
that the perception of control is as important as the actual experience of it (Langer 1975; Ryan and Deci 2000) which also implies that someone can experience autonomy without actually having control.

We posit that the ability to determine situational outcomes and choose freely is especially important for spendthrifts. As argued above, there is reason to believe that spendthrifts' spending behavior reflects a tendency to act without restraint. Spendthrifts act on impulse and spontaneously give in to transient desires. This behavior is facilitated by the assumption of personal control and the ability to determine situational outcomes. Indeed, psychological independence fosters impulsive spending behavior (Zhang and Shrum 2009) and people free of chronic suffering are more likely to enjoy the benefits of such freedom (Ryan and Frederick 1997). We therefore suggest that personal control and the feelings of autonomy this affords is a key driver of spendthrift behavior. Consequently, we predict that situationally induced threat to personal control can influence spendthrifts' feelings of autonomy and result in a decreased willingness to spend. Our predictions, therefore, suggest that spendthrifts do not *always* spend more than tightwads. When personal control is threatened and spendthrifts are not able to express own wants, their spending behavior could resemble tightwads' spending habits. Spendthrifts could thus, paradoxically, act like tightwads.

Tightwads' spending behavior on the other hand is less likely to be influenced by shifts in personal control. Tightwads do not exhibit a strong urge to act autonomously and respond to transient desires. Since tightwads tend to excessively plan and attempt to regulate their spending behavior (Lynch et al. 2010), choice freedom and autonomy are not important concerns for these individuals. In fact, since tightwads believe that money protects them against future uncertainties (Rose and Orr 2007), their spending behavior is disciplined (Lastovicka et al. 1999). Overall, previous findings suggest that tightwads are high in self-control and therefore exhibit strictly monitored spending behavior that remains unaffected by situational cues related to threats in freedom to spend.

To summarize, we hypothesize that a situationally induced threat to personal control should moderate spendthrifts' (but not tightwads') spending behavior and this effect is mediated by diminished feelings of autonomy. See figure 1 for the conceptual framework that guides our empirical investigation.

Figure 1. Conceptual framework



3. OVERVIEW OF THE EMPIRICAL INVESTIGATION

Across three studies we manipulate situationally induced threat to personal control in different ways and in different contexts to test spendthrifts' willingness to spend money. In study 1, spendthrifts (but not tightwads) were less willing to spend money on a pleasurable activity when experts determined their purchase option instead of themselves. In study 2, we explore how consumption context affects the studied phenomenon. Spendthrifts exhibited a lower willingness to spend when forced to solve practical problem. Lastly, in study 3 spendthrifts were again less willing to spend money when they were not able to choose because the alternatives were sold out. In this study we also tested our hypothesized process: mediation analysis establishes that the threat to personal control lowers the positive feelings related to autonomy, subsequently diminished spending behavior more significantly than when personal control and feelings of autonomy were unthreatened.

4. STUDY 1: MODERATING ROLE OF PERSONAL CONTROL

The goal of study 1 was to demonstrate the basic effect that when personal control is threatened, spendthrifts' willingness to spend diminishes. Since external forces of control often originates from social agents or fate (Langer 1975; Zuckerman et al. 1978), we manipulate personal control threat by imposing outcomes decided by experts. Participants

were therefore assigned either an outcome by experts or could personally choose one, after which they were asked whether they were willing to spend money on a subsequent pleasurable activity.

4.1 Method

Ninety US-respondents ($M_{age} = 33$ years, 49 female) were recruited through Amazon Mechanical Turk and each were compensated (\$.20). Males and females were evenly distributed across conditions ($\chi^2(1, 89) = .20, p = .66$). All respondents were asked to imagine that they always enjoyed exercising and that they are subscribed to a local gym (cf., Botti and McGill 2011). They further imagined that they wanted to intensify their training sessions by joining one of four training camps the gym organized during the weekend. All respondents read the same scenario:

Imagine that you have always enjoyed exercising. Exercising is an inherently motivated and self-rewarding activity for you as it is pleasurable and exciting. Although you exercise regularly and are subscribed to the local gym, your training sessions are not as intense as they used to be.

Recently your gym has decided to organize a training camp during the weekend. The goal of the training camp is to offer a challenging and sensational training program. You have decided to join the training camp because you find it very pleasurable to exercise and it allows you to intensify your personal training program.

In total your gym offers four different training programs during that weekend:

1. Military Boot Camp: A mix of long-distance running, short-distance swimming, and circuit training
2. Iron Men Training Camp: A mix of short distance running, long-distance swimming, and endurance-building exercises
3. Power Biathlon Training Camp: A mix of long-distance biking, short-distance swimming, and strength training
4. Master Cardio Camp: A mix of long-distance biking, repeated uphill sprints, and cardiovascular exercise

After reading the scenario and being informed about the different training programs, respondents were either told that they could choose one of the four training programs or that

the staff of the gym had assigned one that matched their personal abilities. In the latter condition (no-choice), participants were evenly assigned to the four programs. After reading the scenario, we told the respondents that the gym has a Finnish sauna and asked whether they would be interested in paying an additional fee to visit the sauna (“Would you be willing to pay an additional fee to visit the Finnish sauna?”; 1 definitely will not; 7 definitely will). As manipulation checks, participants were asked if they experienced the allocation of the training program as something they personally endorsed or as externally enforced (“I feel as if I own this choice of training program”; 1 = strongly disagree; 7 = strongly agree). The tightwads-spendthrifts scale as developed by (Rick et al. 2008) was also administered. This scale consists of four items ($\alpha = .75$) that measure individuals’ tendency to impulsively spend money. A higher score indicates a higher inclination to be a spendthrift. In order to control for decision involvement related issues, we also asked whether the respondents generally liked to exercise (1 = dislike extremely; 7 = like extremely).

4.2 Results

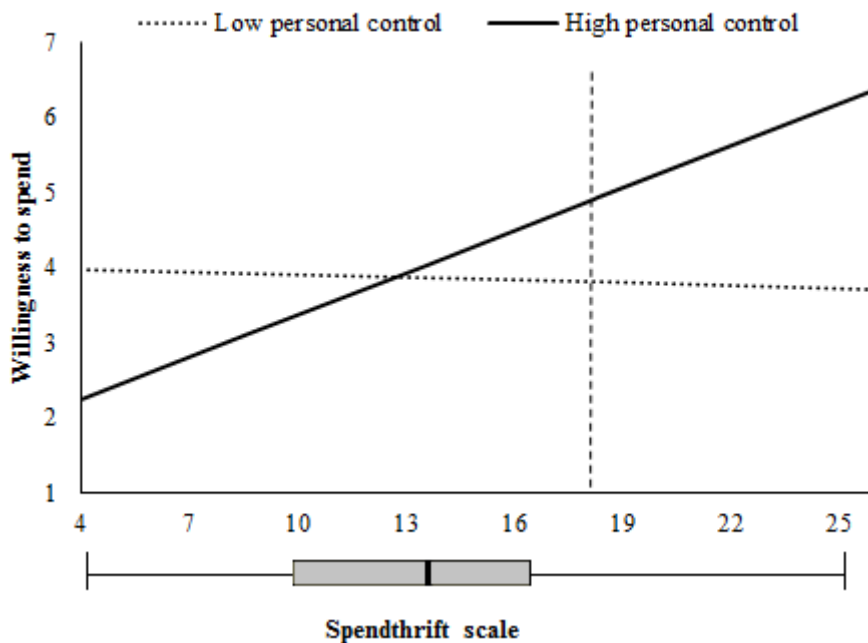
Manipulation check: The manipulation of personal control was effective. The respondents in the threat condition indicated that the training program choice was enforced ($M = 3.02$, $SD = 1.77$) compared to the respondents who could choose ($M = 4.72$, $SD = 1.38$; $F(1, 89) = 25.80$, $p < .001$). In further support of our manipulation, the average score of the respondents in the low personal control condition was significantly lower than the scale’s midpoint (3.02 vs 4; $t(43) = -3.66$, $p < .001$). The respondents in the high personal control condition, on average, scored higher than the scale’s midpoint (4.72 vs 4; $t(45) = 3.55$, $p < .001$). In addition, there were no differences in decision involvement since non-choosers liked to exercise ($M = 4.59$, $SD = 1.34$) as much as the choosers ($M = 4.87$, $SD = 1.52$; $F(1, 89) = .85$, $p = .36$).

Willingness to spend: Generally, the willingness to purchase a visit to the Finnish sauna did not differ when respondents were able to choose ($M = 4.07$, $SD = 1.88$) or not ($M = 3.86$, $SD = 2.02$; $F(1, 89) = .24$, $p = .63$). Willingness to purchase a visit to the Finnish sauna within the non-choosing condition did not differ as a function of the assigned training program ($M_{\text{bootcamp}} = 4.25$, $SD = 2.34$; $M_{\text{iron men}} = 4.17$, $SD = 2.13$; $M_{\text{power biathlon}} = 3.33$, $SD = 1.73$; $M_{\text{master cardio}} = 3.55$, $SD = 1.86$; $F(3, 40) = .52$, $p = .67$). In the choice condition, the different training programs were equally appealing as indicated by similar choice counts ($N_{\text{bootcamp}} = 11$; N_{iron}

men = 12; $N_{\text{power biathlon}} = 14$; $N_{\text{master cardio}} = 9$) ($\chi^2(46) = 1.13, p = .77$). The willingness to purchase a visit to the sauna also did not significantly across programs in the choice condition ($M_{\text{bootcamp}} = 3.73, SD = 1.85$; $M_{\text{iron men}} = 4.33, SD = 1.82$; $M_{\text{power biathlon}} = 4.29, SD = 2.02$; $M_{\text{master cardio}} = 3.78, SD = 1.98$) ($F(3, 42) = 3.19, p = .81$).

Willingness to spend \times *spendthrift tendency*: Overall, spendthrifts were more willing to spend money on a visit to the Finnish sauna with marginal levels of significance ($r = .19, p = .08$). More importantly, the hypothesized interaction (see graph 1) between the spendthrift-scale and the choice versus no-choice conditions when predicting willingness to spend money on a visit to the Finnish sauna was significant ($F(1, 89) = 5.64, p < .05$).

Graph 1. Choice \times Spendthrifts on willingness to purchase a visit to the sauna



NOTE: the dashed horizontal line indicates the boundary of the region of significance at $p < .05$ (> 18.30).

Contrast analysis revealed that spendthrifts were relatively more willing to spend money when they could participate in the training program of their choice (+ 1 $SD = 1.09$; $t(89) = 1.96$; $p < .05$) while tightwads' willingness to spend money did not differ when they could choose a training program or not (- 1 $SD = -.81$; $t(89) = -1.43$; $p = .16$). This suggests that spendthrifts are more susceptible to threats to personal control than are tightwads, which would be consistent with the literature. Johnson-Neyman analysis shows that respondents scoring at least 18.30 (approximately 12% of the respondents) on the spendthrift-tightwad

scale were more willing to spend money on a visit to the Finnish sauna when they could personally choose their training program. Further inspection of the slopes confirmed that spendthrifts planned to spend more than tightwads when they could personally choose their training program ($\beta = .19$; $t(89) = 2.98$, $p < .01$). Lastly, spendthrifts' willingness to spend money on a visit to the Finnish sauna did not differ from tightwads' when personal control was threatened (i.e., when choice of training program was determined by experts; $\beta = -.01$; $t(89) = -.22$, $p = .83$).

4.3 Discussion

We hypothesized that spendthrifts would refrain from spending in situations where personal control was threatened. In support of our hypothesis, study 1 showed that spendthrifts spend more when they experience personal control and this tendency is diminished when personal control was threatened. Importantly, spendthrifts' spending did not differ from tightwads' when they could not choose, making spendthrifts act a lot like tightwads.

5. STUDY 2: CONSUMPTION CONTEXT MATTERS

The goal of study 2 was to assess how consumption contexts can threaten personal control, hamper spendthrifts' feelings of autonomy, and, decrease willingness to spend. Spendthrifts like to spend, especially on pleasurable things. Consequently, a situation that could potentially threaten spendthrifts' sense of personal control is the *functional requirement* to spend to solve a practical problem. Practical problems are often unforeseen, happen beyond an individual's control, and, usually give rise to utilitarian purchases that offer instrumental solutions (Dhar and Wertenbroch 2000). Consequently, we predict that spendthrifts, who typically like to act on their desires and derive pleasure from indulgence, are no more likely than tightwads to want to spend money in utilitarian consumption contexts compared to more hedonic, volitional, consumption contexts.

5.1 Method

Data was collected from 186 respondents through the online panel at a large university (*Mage* = 31 years, 136 female). Males and females were evenly distributed across both conditions ($\chi^2(1, 186) = 0.41, p = .52$). The respondents were instructed to imagine that they needed transportation and had to buy a bike (utilitarian consumption), or imagined that they planned to buy a bike for recreational purposes (hedonic consumption). Buying a bike because one has to, to solve a transportation need threatens one's sense of personal control as the motivation to buy the bike does not originate from the self. Buying a bike to cycle as a hobby does not hamper personal control because it reflects personal want and desires. Consequently, decisions on the purchase of bike accessories (our key DV) would be tainted by the functionality (hedonicity) of the consumption context.

In the low personal control condition, the respondents read the following text (translated version):

Recently you started a new job. Your job is located in your hometown, but the place is difficult to reach by car or public transportation. The only way to get to work efficiently is by bicycle. However, before you can start your new job you have to buy a bike. You decide to buy this bike only to get you to work and back. The local bike dealer offers multiple models at different levels of quality. You decide to buy a midrange model of a well-known brand. Finally you can get to work efficiently using your bicycle.

In the high personal control condition, the respondents read the following scenario (translated version):

Recently you decided to take up cycling as a hobby. You have always enjoyed taking bike trips. You plan to take at least one enjoyable trip every week. However, before you can start your new hobby you have to buy a bike. You decide to buy this bike only for recreational purposes. The local bike dealer offers multiple models at different levels of quality. You decide to buy a midrange model of a well-known brand. Finally you can start cycling as your hobby. You have a lot of fun on your bike trips. You really like to ride your bike.

After reading the scenario, participants had to indicate if they would be interested in purchasing some additional products to improve their bike rides. We asked (1 definitely will not; 7 definitely will) if they would buy a bicycle helmet, waterproof cycling jacket, spare

inner tubes, bicycle pump and reflective clothing ($\alpha = .69$). To test how the respondents perceived the purchase, we offered definitions of utilitarian and hedonic consumption and asked them to rate the purchase (1 = very hedonic, 7 = very utilitarian). In addition, the respondents had to indicate how much fun they anticipated having with the bike (1 = very little fun, 7 = a lot of fun). Feelings of autonomy was measured by asking if they interpreted the purchase as something they wanted to do rather than something they had to do (1 = something I totally have to do; 7 = something I totally want to do). The spendthrift-scale ($\alpha = .74$) was administered. One might argue that negative mood, and not diminished autonomy, might explain spendthrifts reduced willingness to spend, so we measured baseline mood by asking how participants felt about making the bike accessory purchases (1 = very bad, 7 = very good). Finally, we asked whether they generally like riding with a bike (1 = definitely enjoy biking, 7 = definitely do not enjoy biking) to control for product involvement.

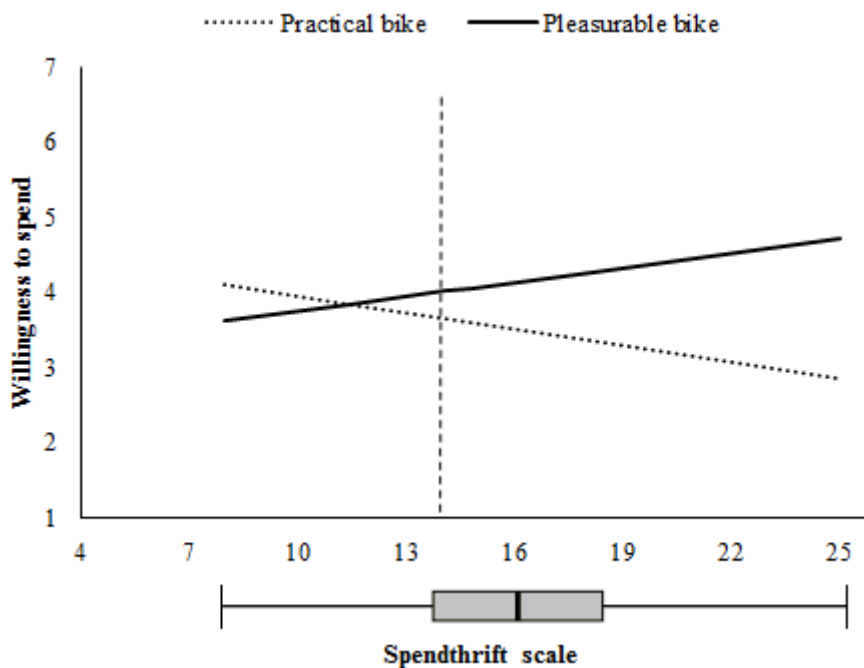
5.2 Results

Manipulation checks: First, we checked whether the manipulation was effective and tested for potential confounds. Indeed, buying a bicycle to commute was perceived as more utilitarian ($M = 5.69$, $SD = 1.03$) than buying a bicycle for a hobby ($M = 2.75$, $SD = 1.45$; $F(1, 185) = 256.59$, $p < .001$). In addition, the respondents anticipated having more fun while performing their hobby ($M = 5.92$, $SD = .62$) compared to commuting ($M = 4.61$, $SD = 1.25$; $F(1, 185) = 80.22$, $p < .001$). No differences in mood were found between respondents in the hedonic consumption context ($M = 5.30$, $SD = .97$) or those in the utilitarian consumption context ($M = 5.34$, $SD = .99$; $F(1, 185) = .07$, $p = .79$). Product involvement did not differ across both conditions; the respondents in the hedonic condition ($M = 2.76$, $SD = 1.41$) equally liked to ride with a bike as the ones in the utilitarian condition ($M = 2.98$, $SD = 1.51$; $F(1, 185) = 1.00$, $p = .32$).

Willingness to Spend Money on Bike Accessories: Overall, the respondents that imagined buying the bicycle for practical purposes (commute; $M = 3.60$, $SD = 1.22$) were less willing to spend money on the bike accessories than respondents buying the bicycle for pleasurable reasons (hobby; $M = 4.05$, $SD = 1.20$; $F(1, 185) = 6.51$, $p < .05$). In general, spendthrifts did not exhibit a higher willingness to spend money ($r = -.06$, $p = .44$). The interaction (see graph 2) between purchase goal and the spendthrifts-scale was significant ($F(1, 185) = 6.54$, $p <$

.05). Follow-up analysis of this interaction showed that spendthrifts were more willing to spend when buying a bicycle for their hobby relative to buying a bicycle to commute (+1 *SD* = .91; $t(185) = 3.61$; $p < .001$). No differences in willingness to spend occurred for tightwads in across both purchase contexts (-1*SD* = -.01 ($t(185) = -.02$; $p = .98$).

Graph 2. Purchase goal × Spendthrifts on willingness to spend money on bike accessories



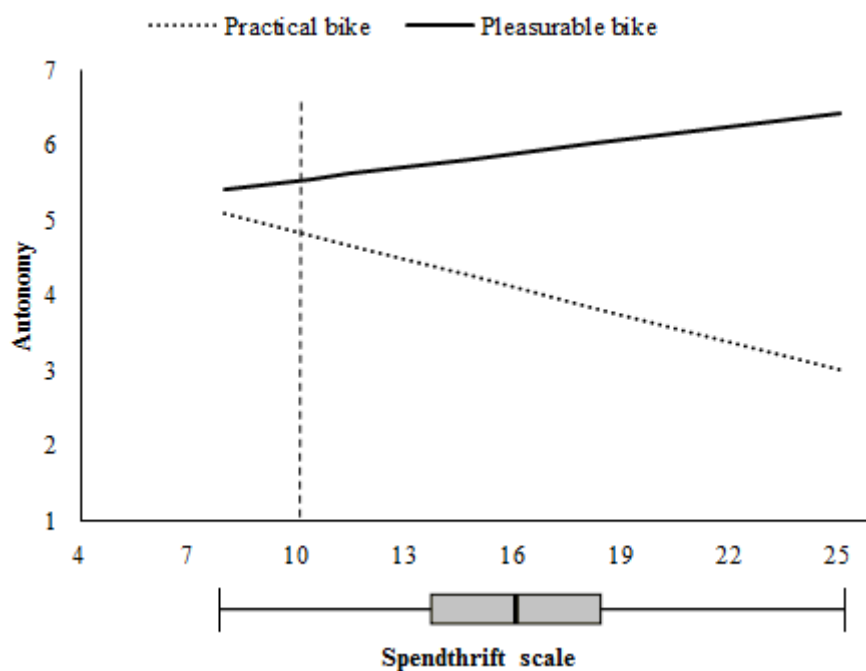
NOTE: the dashed horizontal line indicates the boundary of the region of significance at $p < .05$ (> 14.07).

Johnson-Neyman analysis showed that participants scoring at least 14.07 on the spendthrift-scale (approximately 53% of the respondents) were less willing to spend money in the practical instead of the pleasurable purchase context. Lastly, spendthrifts did not significantly differ from tightwads when having a pleasurable purchase goal ($\beta = .06$; $t(185) = 1.56$, $p = .12$), but exhibited a significantly lower willingness to spend than tightwads when having the practical purchase goal ($\beta = -.07$; $t(185) = -2.14$, $p < .05$).

Perceived Autonomy: Generally, respondents in the practical purchase condition ($M = 4.24$, $SD = 1.83$) experienced less feelings of autonomy than those in the pleasurable condition ($M = 5.81$, $SD = 1.28$; $F(1, 185) = 45.35$, $p < .001$). On average, spendthrifts did not experience more autonomy ($r = -.12$, $p = .12$) than tightwads. However, the hypothesized interaction (graph 3) between purchase motivation and the spendthrift-scale was significant ($F(1, 185) = 6.74$, $p < .01$). Post-hoc analysis demonstrated that spendthrifts experienced less autonomy

than tightwads when buying the practical bike ($\beta = -.12$; $t(185) = -2.75$, $p < .01$). Spendthrifts and tightwads did not experience more or less autonomy in the pleasurable purchase situation ($\beta = .06$; $t(185) = 1.11$, $p = .27$). Moreover, spendthrifts (+1 $SD = 2.95$; $t(185) = 6.58$, $p < .001$) and tightwads (-1 $SD = 0.95$; $t(185) = 2.92$, $p < .001$) both experienced more autonomy when buying the pleasurable bike compared to the practical one. However, a Johnson-Neyman analysis revealed that this was not case for extreme tightwads (scoring less than 10.55 on the spendthrift-scale, approximately 15% of the respondents). Extreme tightwads did not experience more autonomy while purchasing the pleasurable bike.

Graph 3. Purchase goal \times Spendthrifts on perceived autonomy



NOTE: the dashed horizontal line indicates the boundary of the region of significance at $p < .05$ (> 10.55).

Mediation Analysis: To test whether tightwads versus spendthrifts willingness to buy across the pleasurable versus practical purchase context is mediated by perceived autonomy, we used the Preacher and Hayes (2008) macro to estimate the indirect effects (model 8). All the indirect effects were estimated using 10,000 bias-corrected bootstrap resamples. This analysis revealed a positive and significant indirect effect ($\beta = .03$) because the estimated 95% confidence interval did not include zero (LL = .007; UL = .065). Further inspection demonstrated a significant conditional indirect effect of autonomy for spendthrifts (+ 1 SD : $\beta = .37$; LL .125; UL .658) and tightwads (-1 SD : $\beta = .16$; LL .044; UL .363). When controlling for feelings of autonomy, the conditional direct effect of spendthrifts ($\beta = .55$; $t(185) = 2.02$, p

< .05) lost explanatory strength compared to the model without autonomy ($\beta = .91$; $t(185) = 3.61$, $p < .001$). This suggests that spendthrifts' willingness to spend is partially mediated by autonomy. The conditional direct effect of tightwads was no longer significant ($\beta = -.16$; $t(185) = -.65$, $p = .52$).

5.3 Discussion

Study 2 lends support for our model by manipulating feelings of personal control by confronting the respondents with a practical problem versus a pleasurable goal. Spendthrifts were less willing to spend when confronted with the practical problem because they experienced less personal control which affects their feelings of autonomy. Strikingly, spendthrifts were even less willing to spend money than tightwads when having to solve the practical problem. By demonstrating that spendthrifts plan to spend less in practical than pleasurable purchase contexts, we corroborate our previous findings by showing that spendthrifts spend less in externally controlled (practical instead of pleasurable) situations. Study 2 also illustrated that decreased feelings of autonomy mediated the effect of personal control threat on willingness to spend.

6. STUDY 3: MEDIATING ROLE OF AUTONOMY

The goal of study 3 is twofold. First we aim to replicate our hypothesized effect in a purchase situation that does not allow personal choice because the alternatives are temporarily out of stock due to high demand. When several alternatives are no longer available, consumers no longer can express their preferences and thus are confronted with reduced control. Second, we strive to offer mediation evidence by illustrating that diminished autonomy explains why a lack of control decreases spendthrift's spending behavior.

6.1 Method

One hundred and thirty-four respondents ($M_{age} = 34$ years, 56 female) completed our online experiment through Amazon Mechanical Turk and were compensated (\$.20). Males and females were evenly distributed across conditions ($\chi^2(1, 133) = .99$, $p = .32$). For this

experiment we instructed the respondents to imagine that they like massages and found a spa that offers four different types of massages. We gave a brief description of the different massages and asked to read it carefully in order to figure out which they would prefer. Prior research also used a similar massage context (Botti and McGill 2011).

There were four different massages:

1. Swedish Massage: A traditional European massage focusing on circulation, soreness, and relaxation. This may be combined with deep tissue massage when more pressure is needed.
2. Deep Tissue Massage: Using a variety of techniques, our therapists create a highly therapeutic massage incorporating deep pressure to ease muscle soreness and tension, and rejuvenate the body.
3. Deep Tissue Massage: Five Elements Massage: It combines massage with heat packs, healing essential oils, and herb salves to increase flexibility, decrease muscular tension, and detoxify the body.
4. Reflexology Massage: The ancient oriental practice of pressure-point massage concentrates on the nerve endings and pressure points in the head, hands, and feet to revitalize the body and release muscle tension.

After reading about the different massages the respondents were either given the opportunity to select one of the massages (high personal control condition) or were told that it has been busy at the spa and that there was only one of the four massages available (so they could not choose; low personal control condition). In fact, for this latter condition, we randomly assigned one of the four massages. All massages were assigned an equal amount of times. Next we told that the spa offered multiple other services (Finnish sauna, Hammam, Jacuzzi, Lounge area) and asked if they would be willing to spend money on it (“Would you be interested in paying an additional fee to make use of one of the following services?”: 1 Definitely not; 7 Definitely will). We averaged the willingness to spend money on these services ($\alpha = .76$) in order to construct a general measure. To assess the feelings of autonomy we administered the subjective vitality scale (Ryan and Frederick 1997). This scale ($\alpha = .88$) consist out of 7 items (e.g.,” At this moment, I feel alive and vital”, “I don’t feel energetic right now” (r), “Currently I feel so alive that I want to burst”: 1 Strongly disagree; 7 Strongly agree) and has shown to capture feelings of situational autonomy (Chen and Sengupta 2014). We also offered the spendthrifts-scale ($\alpha = .69$) and assessed decision involvement (“In general, do you like massages?”: 1 Dislike extremely; Like Extremely). To check our

manipulation ($\alpha = .88$) we asked whether they experienced control over the process of choosing the massage (“I believe that the massage reflects my own choice”, “I believe that I had a choice over which massage I could select”, “I felt that I had no control to decide what to choose” (r), “I could not choose the massage because the staff assigned one to me”: 1 Strongly disagree; 7 Strongly agree).

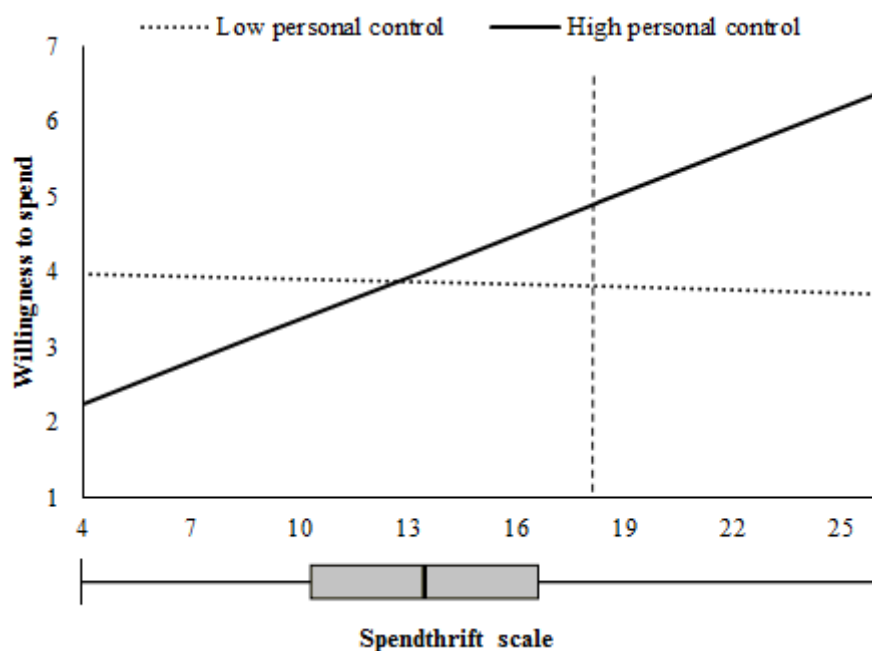
6.2 Results

Manipulation check: The respondents who could not choose the massage of their preference experienced less personal control ($M = 3.17$, $SD = 1.58$) than those who could choose ($M = 6.07$, $SD = 0.81$; $F(1, 133) = 181.74$, $p < .001$). The non-choosers scored significantly lower than the scale’s midpoint (3.17 vs. 4; $t(64)$; -4.28 , $p < .001$), the choosers scored significantly higher than the scale’s midpoint 6.07 vs. 4; $t(68)$ 21.34, $p < .001$). Decision involvement was not a problem as the choosers ($M = 5.43$, $SD = 1.24$) were not differently involved compared to the non-choosers ($M = 5.23$, $SD = 1.40$; $F(1, 133) = 0.80$, $p = .37$).

Willingness to spend money: The respondents that could choose a massage ($M = 3.31$, $SD = 1.40$) did not differ in their willingness to spend money on the additional services when compared to the ones that could not choose a massage ($M = 3.11$, $SD = 1.18$; $F(1, 133) = .79$, $p = .38$). We also checked whether willingness to spend could be a function of the chosen massage, when the respondents could choose. The different massages were chosen about an equal amount of times ($N_{\text{swedish message}} = 18$; $N_{\text{deep tissue message}} = 25$; $N_{\text{five elements message}} = 14$; $N_{\text{reflexology message}} = 12$) ($\chi^2(69) = 5.73$, $p = .12$) and the type of massage that was chosen did not affect willingness to spend ($M_{\text{swedish message}} = 3.32$, $SD = 1.56$; $M_{\text{deep tissue message}} = 3.52$, $SD = 1.36$; $M_{\text{five elements message}} = 3.09$, $SD = 1.35$; $M_{\text{reflexology message}} = 3.12$, $SD = 1.43$) ($F(3, 65) = .36$, $p = .78$). We also checked if willingness to spend differed as a function of the assigned massage, when the respondents were not able to choose. Here we did find a difference ($M_{\text{swedish message}} = 3.40$, $SD = 1.18$; $M_{\text{deep tissue message}} = 2.37$, $SD = 1.10$; $M_{\text{five elements message}} = 3.54$, $SD = .73$; $M_{\text{reflexology message}} = 3.24$, $SD = 1.29$) ($F(3, 61) = 3.62$, $p = .02$). In particular, participants that got the Deep Tissue Massage were less willing to spend than the ones that were assigned the Five Elements Massage ($p = .03$). Yet controlling for this difference did not affect all subsequent analysis.

Willingness to spend × *Spendthrift tendency*: Across the conditions, spendthrifts were not more willing to spend money on the additional services offered by the spa ($r = .13, p = .12$). We found a significant interaction (see graph 4) between the spendthrifts-scale and the manipulation of personal control and thus again replicated our hypothesized effect ($F(1, 133) = 3.79, p = .05$). A closer inspection of the interaction showed that spendthrifts were less willing to spend money in the spa when they could not personally choose their type of massage (+ 1 $SD = .60; t(133) = 1.88; p = .06$). Tightwads' willingness to spend did not differ when being able to choose or not (-1 $SD = -.28; t(133) = -.87; p = .38$). Johnson-Neyman analysis revealed that participants at least scoring 18.34 (approximately 10% of the respondents) on the spendthrift-scale were more willing to spend money in the spa when they had personal control. Spendthrifts' willingness to spend was not different from tightwads' when they could not choose their massage ($\beta = -.02; t(133) = -.38, p = .71$). When spendthrifts experienced control over the outcomes they were more willing to spend money than tightwads ($\beta = .10; t(133) = 2.40, p = .02$).

Graph 4. Personal control × Spendthrifts on willingness to spend

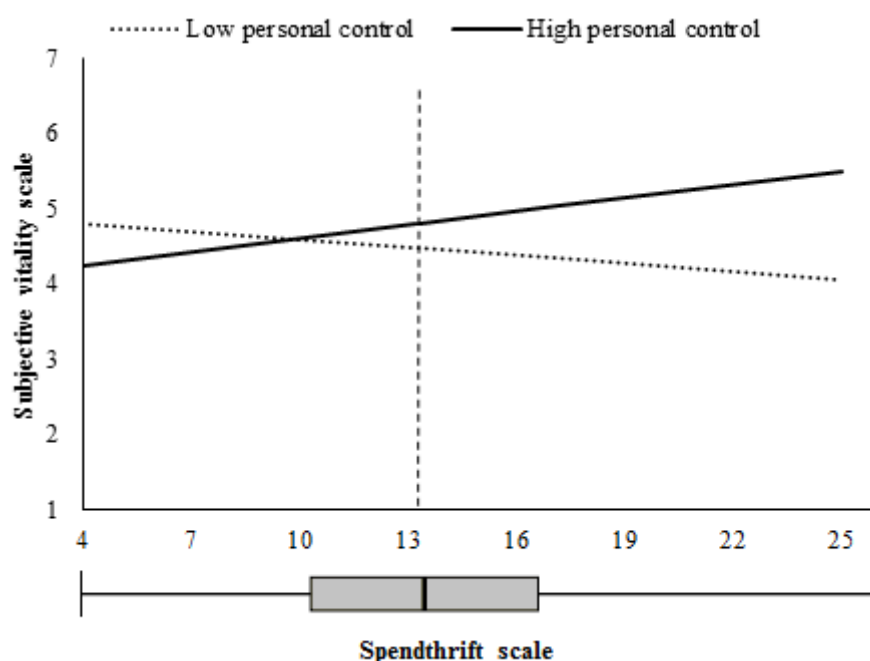


NOTE: the dashed horizontal line indicates the boundary of the region of significance at $p < .05$ (> 18.34).

Feelings of Autonomy: On average, the inability to choose the massage lowered the feelings of autonomy ($M = 4.49, SD = 1.01$) compared to being able to choose ($M = 4.83, SD = .95; F(1, 133) = 3.91, p = .05$). Across the conditions, spendthrifts did not experience greater feelings

of autonomy ($r = .07, p = .40$), but the personal control \times spendthrifts interaction (see graph 5) was significant ($F(1, 133) = 4.84, p = .03$). Analysis of the contrasts showed that spendthrifts experienced more feelings of autonomy when they could choose the massage versus not (+1 $SD = .69; t(133) = 2.90; p < .01$). Being able to choose or not did affect tightwads' feelings of autonomy (-1 $SD = -.058; t(133) = -.20; p = .84$). The Johnson-Neyman region of significance starts at 13.31 on the spendthrifts-scale (approximately 45% of the respondents). Spendthrifts experienced more feelings of autonomy than tightwads when they could choose ($\beta = .06; t(133) = 1.98, p = .05$), which was not the case when they could not choose ($\beta = -.04; t(133) = -1.15, p = .25$).

Graph 5. Personal control \times Spendthrifts on feelings of autonomy



NOTE: the dashed horizontal line indicates the boundary of the region of significance at $p < .05$ (> 13.31).

Mediation analysis: We tested if feelings of autonomy can account for spendthrifts' willingness to spend by using the Preacher and Hayes (2008) macro (model 8) and estimated the indirect effect of feelings of autonomy with 10,000 bootstrap resamples. This analysis yielded a significant indirect effect of autonomy ($\beta = .03$) as zero was not included in the 95% confidence interval (LL = .001; UL = .077). Further inspection showed a significant indirect effect of autonomy for spendthrifts (+ 1 $SD: \beta = .19; LL .027; UL .513$), the conditional direct effect of spendthrifts was no longer significant when controlling for autonomy ($\beta = .41; t(133) = 1.26, p = .21$). This evidence suggests that spendthrifts' willingness to spend across the

conditions is fully mediated by feelings of autonomy. The conditional indirect effect of autonomy was not significant for tightwads (-1 SD : $\beta = -.01$; LL $-.196$; UL $.097$, nor was the direct effect of tightwads significant when controlling for autonomy ($\beta = -.26$; $t(133) = -.85$, $p = .40$).

6.3 Discussion

Spendthrifts were less willing to spend on additional services when a situation of strong demand eliminated their possibility of choosing a type of massage. These results replicate the findings of the previous studies and further support our conceptual model. Importantly, study 3 also offers strong empirical evidence of the underlying process. Spendthrifts were less willing to spend money when experiencing a lack of control because this drained their feelings of autonomy.

7. GENERAL DISCUSSION

Spendthrifts differ from tightwads in the freedom and lack of restraint with which they spend. In the current paper we focus on the role of personal control and the feelings of autonomy this affords in driving spendthrift behavior. We demonstrate that situationally induced threat to personal control can diminish spendthrifts' feelings of autonomy and decrease their willingness to spend. Given the burgeoning problem of overspending, our research identifies a key factor that can help get spendthrifts act more like tightwads.

With three experiments, we tested spendthrifts' willingness to spend money by varying the perception of threat to personal control across different consumption situations. In study 1 we showed that spendthrifts were less willing to spend money in a subsequent purchase situation (visit to the sauna) when a third party (experts) first determined which training program they had to follow. Study 2 revealed that spendthrifts do not want to spend in consumption contexts where they are forced to solve a practical problem because it reduces their feelings of autonomy. Study 3 demonstrated that spendthrifts refrained from spending when confronted with sold out products. Products or services that are sold out limit the possibility to personally choose a valued alternative. Study 3 provided mediation evidence by showing that spendthrifts reduced willingness to spend in response to threat of control occurred because it drained spendthrifts' (but not tightwads') feelings of autonomy. In both

study 2 and study 3 spendthrifts' willingness to spend was mediated by feelings of autonomy. We relied on different measures of autonomy in these studies which is an indicator of the robustness of our proposed effect.

In all our studies, Johnson-Neyman follow-up of the significant interactions show that spendthrifts are affected by threat of personal control, but tightwads are not. The scale score at which a significant difference between the control and the experimental condition is obtained does vary, however, across studies. Notably, the region of significance starts at a lower scale score for studies 1 and 3 compared to study 2 (around 18 vs. around 14). As a result, the experimental treatment is estimated to affect around 10% of the participants in studies 1 and 3 but around 55% in studies 2. These differences reflect sample differences: Studies 1 and 3 are run with Amazon's Mechanical Turkers but study 2 college students. Prior research already established that workers on Mechanical Turk are more likely to be tightwads when compared to community samples (Goodman, Cryder, and Cheema 2013), which is also reflected in the average score on the spendthrift-scale ($M_{\text{study1}} = 13.41$, $M_{\text{study2}} = 14.79$, $M_{\text{study3}} = 13.20$). The systematic variation across studies does caution to take potential differences in distribution of a target variable into account when inferring the point of impact of a treatment for a general population from results with AMT or student samples. This information should be taken into account when choosing to treat the tightwad-spendthrift scale as a continuous variable or recoding it to a categorical variable which has been done both (cf., Rick et al. 2008). Recoding the scale to a categorical variable does reduce the variance and therefore power of this measure. In addition, the arbitrary cutoff points that categorize the data could also differ from the real transition points in the sample hence reducing the strength of the (interaction) effects. In order to maximize power and the likelihood of observing the relevant effects, we decided to treat the tightwad-spendthrift scale as a continuous variable.

In the introduction we speculated that spendthrifts act on the presumption of autonomy. Earlier findings suggest that spendthrifts act impulsively, which presupposes the freedom to do so. Indeed, our studies provide sufficient empirical evidence to support this theoretical argument. In both study 2 and study 3 we found that spendthrifts experience more autonomy in the unthreatening control conditions. This finding is in line with earlier work that documented a higher likelihood to experience positive feelings of autonomy for people free of chronic pains (Ryan and Frederick 1997) and offers a view on the unique psychology of spendthrifts. Further elaborating on this, the increased positive feelings of autonomy that spendthrifts experience could also indicate that spendthrifts reap additional reward from spending. Spending money may offer spendthrifts freedom and therefore bolsters feelings of

autonomy. If this interplay between autonomy and spending actually exist, it would be one reason to get locked in a continuous cycle of spending.

7.1 Theoretical Contributions and Implications

Our finding that personal control and autonomy is important for spendthrifts contributes to several streams of literature. First, we offer a more thorough understanding of a key causal determinant of spendthrifts' willingness to spend money. Up until now, the common assumption was that spendthrifts pretty much always spend money recklessly and wastefully (Rick and Loewenstein 2008). Our findings demonstrate that there is some observable rationale underlying spendthrifts' spending behavior. In particular, we demonstrate that spendthrifts do not spend when their sense of personal control is threatened and their feelings of autonomy diminished. Second, we advance knowledge about individual differences in spending behavior by illustrating that spendthrifts can also refrain from spending. Earlier research has examined how spending differences between spendthrifts and tightwads can vanish by encouraging tightwads to spend more (Rick et al. 2008). Our findings verify that the spending gap between spendthrifts and tightwads can also be bridged by getting spendthrifts to spend less. The current results may also offer some new insights for research investigating differences between how spendthrifts view practical versus pleasurable purchases. Prior research has already shown that some people are unable to indulge on pleasurable things (Kivetz and Simonson 2002). In contrast, we showed that spendthrifts tend to refrain from spending when they were forced to solve a practical problem. In fact, they were even less willing to spend than tightwads. However, general conclusions with regard to hedonic versus utilitarian consumption are precautionary. We did not explore the boundaries of this effect. Our empirical evidence does not allow to argue that spendthrifts will always spend less than tightwads in utilitarian shopping contexts. Presumably, their willingness to spend in utilitarian contexts is contingent upon, the degree to which the purchase elicited feelings of diminished personal control.

Our current results could also be interpreted as spendthrifts' inability to make consequentialist decisions. This might be because they tend to be myopic and do not elaborate upon future outcomes (Haws and Poynor 2008; Lynch et al. 2010). Study 2 provides some evidence of this flaw. In this study, spendthrifts were less willing to spend money on bike related products when confronted with a transportation problem. When rationalizing about

bicycle commuting, it should become clear that this daily activity will inevitably lead to the experience of practical problems related to rain, nightfall or flat tires. Nevertheless, spendthrifts were not willing to spend more money on products that could offer practical solutions to these problems. This could be understood as a consequence of spendthrifts' disregard to elaborate on future unpleasant events. The findings of study 2 can thus be interpreted as spendthrifts' indifference for making thoughtful, consequentialist decisions.

Tightwads and frugal people contemplate a lot and excessively plan their expenditures (Lastovicka et al. 1999; Rick et al. 2008). Despite all efforts, their spending behavior is not ideal as their sensitivity to the pain of paying ensures them to spend less than they preferably should. In our studies, we showed that tightwads were less likely to spend money on a pleasurable visit to the sauna, a bike to execute their hobby and the services provided by a spa. These findings are in accordance with previous research that documented individual differences in under-indulgence or hyperopia (Haws et al. 2011; Kivetz and Keinan 2006) and may be attributed to their inability to experience the positive consequences related to autonomy.

Tightwads' strict decision making system requires them to exert a lot of self-control in order to pull the reins. This rigidity may convey that tightwads are driven by an introjected motivation (Ryan and Connell 1989). Holding an introjected motivation means that internal, esteem-based pressures direct behavior with the purpose of avoiding bad feelings such as guilt or shame. These internal pressures obviously limit tightwads' freedom of action. Tightwads' spending rules are often dictated by significant others in earlier stages of life (Lastovicka et al. 1999). Later on, these enforced rules become an inseparable part of the individual during socialization processes and even exert influence in the absence of its root source. Because tightwads' spending behavior is guided by internal pressures, and they are less concerned with the fulfillment of transient desires, we believe that this urges them to act apathetically and uniformly across high versus low control situations. Consequently, they find it difficult to spend in most situations.

7.2 Future Research Directions

When overlooking the current findings on individual differences in spending behavior and comparing it with earlier findings, some potential consequences for subjective well-being emerge. Spendthrifts spend more than they ideally should, but it appears that they particularly

overspend on pleasurable goods and when they feel empowered and in control of the consumption situation. In addition, spendthrifts seem to be indifferent for the benefits of functional, practical goods. Consuming too little functional products could be detrimental for subjective well-being because these products help to prevent the experience of everyday hassles and annoyances. However, there is reason to believe that spendthrifts are not the only ones scoring lower on subjective well-being. Tightwads' under-consumption of pleasurable goods and their inability to indulge could also be detrimental for well-being. Taking all arguments into account; spendthrifts' and tightwads' spending strategies are potentially harmful for subjective well-being. Hence, there is reason to believe that the relation between individual differences in spending behavior and subjective well-being is curvilinear. Everything in moderation seems to be the best strategy to achieve everyday happiness.

Not only consuming too little useful products hampers spendthrifts' well-being. Spendthrifts save less, often spend more than they have and are responsible for a substantial amount of the credit card debt (Rick et al. 2008). Indebtedness is a major cause of worry and the resulting loan defaults are perceived as a huge threat to the everyday lives of debtors (Wilson 2013). Survey research on potential reasons for credit card indebtedness revealed that 60% of the debtors say that bad decisions are the root cause of their distressing situation (Brinker Report 2015). Our results indeed confirmed that spendthrifts are less occupied with rationalizing and we further showed that they are prone to situational cues. Spendthrifts' decision making ability could thus be improved by teaching them to make thoughtful decisions and immunizing them for situational cues.

A more stringent intervention would be denying them all sense of personal control and thus externally limiting their spending behavior. It is however doubtful that such a strategy will have positive effects on the long run. Feelings of autonomy are considered an important human need and play a crucial role in subjective well-being. Lacking autonomy is detrimental for subjective well-being (Leotti et al. 2010). In addition, it is possible that spendthrifts will try to regain their autonomy in a subsequent situation, after their autonomy and freedom was blocked, by even spending more in the near future. For example, it is possible that spendthrifts will spend more in a new shopping situation when they just have been confronted with a lack of freedom due to third party interference or unavailable products. If spendthrifts indeed would spend more afterwards, blocking their autonomy could be a zero-sum game and would definitely not be beneficiary for subjective well-being. Future research should address these issues.

Further research should not only address the issue of how subjective well-being is related to individual differences in spending behavior, but could also focus on macro-level determinants of spendthrifts' spending behavior. Some societies leave more room for individuals to determine situational outcomes than other. Prior research acknowledges that cross-cultural differences in perceived control exist. For instance, Japanese society is more strictly organized than the U.S. (Berry 2002). Interestingly, credit card indebtedness occurs less frequently in Japan than in the US (The Economist 2001). Within country differences also exist. Survey research noted that citizens of Illinois perceived that they have more control over their lives, while citizens of Alabama believed that they had less control over their lives (Hock 2004). Statistics on indebtedness (Wilson 2013) reveal that citizens of Illinois on average carry \$5,166 credit card debt per borrower and score higher than the US average of \$4,965 credit card debt per borrower. While the citizens of Alabama on average carry \$4,817 credit card debt per borrower, which is below the US average. Indebtedness seems to occur more (less) frequently in societies that leave more room for personal control. Consequently, future research could investigate indebtedness from a macro-level perspective while taking individual differences in spending behavior and perceived (threats to) control into account.

8. CONCLUSION

We showed that spendthrifts refrain from spending when experiencing threats to personal control. When spendthrifts are not able to determine situational outcomes they become tightwads. Threats to personal control reduced their feelings of autonomy, a key driver of their spending behavior. These findings contribute to the research on individual differences in spending behavior by introducing threats to control as a new moderator. Besides these paradoxical finding, the current research is also new because we show that spending differences between tightwads and spendthrifts can drop by the latter spending less instead of the former spending more.

HOW GOD DETERMINES WHAT
WE BUY: RELIGIONS' INFLUENCE
ON IMPULSIVE CONSUMPTION

CHAPTER IV: HOW GOD DETERMINES WHAT WE BUY: RELIGIONS' INFLUENCE ON IMPULSIVE CONSUMPTION

Impulsive consumption is omnipresent in current day's society and constitutes a significant portion of companies' annual sales (Mogelonsky 1998). Impulsive purchases offer instant gratification but also lead to overspending. It has been shown that an important portion of today's credit card debt (and defaults) can be attributed to impulsive purchase behavior (Rick, Cryder, and Loewenstein 2008; Wilcox, Block, and Eisenstein 2011). Impulsive purchases typically involve the desire to buy something and the subsequent (in)ability to exert control over this urge (Vohs and Faber 2007). This struggle is often conceptualized as a conflict between temporarily desires and longer term goals of behavior (Hoch and Loewenstein 1991). Interestingly, religion has been a source of such long-term ideals, values, morals and social expectations (McCullough and Willoughby 2009). Yet, prior research did never consider how religions steer impulsive purchase behavior.

Religions provide a system of norms and values that can guide behavior in two different ways (Ryan, Rigby, and King 1993; Allport 1950; McCullough and Willoughby 2009; Allport and Ross 1967). First, religious beliefs and practices could be intrinsically adopted because of the compelling arguments. If intrinsically adopted, religious norms and values become one's own and automatically, effortlessly guide behavior. Second, religious systems could also be adopted because of self- and other-approval based pressures. If adopted because of external pressures, religion urges to deliberately adjust behavior to the prevailing norms. The deliberative adjustment of behavior obviously requires more effort than the former. These two forms of religious internalization regulate behavior and can produce similar outcomes, but do spawn differences in the long run. The effortful, deliberate adjustment of behavior instead of a more autonomous drive has been associated with lower persistence and adherence (Baumeister 2002; Vohs and Faber 2007; Hofmann, Strack, and Deutsch 2008; Deci and Ryan 1985) and a decrease in psychological health (Bergin, Masters, and Richards 1987; Joiner, Perez, and Walker 2002; Tix and Frazier 2005; Ryan, Rigby, and King 1993).

Prior research did not investigate how religiosity affects impulsive purchase behavior. In the current paper we strive to expand knowledge on this topic. Impulsive purchase behavior is socially undesirable (Zhang and Shrum 2009) and is considered sinful from a religious point of view. Religions typically differentiate between mortal/major and venial/minor sinful behavior (Kierkegaard 2007). In our studies, subtle reminders of religion in a scrambled

sentence task urged to abstain from major sins because of an intrinsic devaluation of the product. The religious prime did not urge to intrinsically devalue minor sinful behavior, but the respondents abstained from it because of a concern with approval based pressures.

We contribute to the research on the effects of religion (Rounding et al. 2012; Friese and Wänke 2014; McCullough and Willoughby 2009; Shariff and Norenzayan 2007; Tix and Frazier 2005) and impulsive consumption (Hoch and Loewenstein 1991; Baumeister 2002; Vohs and Faber 2007) by demonstrating causal influence from the former on the latter. In addition, our current findings further shed a light on the earlier documented increase and decreased subjective well-being associated with religion (Ryan, Rigby, and King 1993). Our current findings suggest that the decreases in subjective well-being could be attributed to inner twists related to the refrainment of intrinsically desirable but socially unwanted behavior. On the other hand, increases in subjective well-being could be related to religion promoting the intrinsic devaluation of the most deleterious sins.

1. IMPULSIVE PURCHASE BEHAVIOR AND SELF-REGULATION

Impulsive purchase behavior is conceptualized as a sudden powerful urge to consume immediately (Rook 1987). This sudden powerful urge results from the activation of hedonic goals upon the exposure to a pleasurable product or service. Whether consumers actually surrender to their prompting desires is contingent on their self-control or willpower. Hence impulsive purchases depend on how desirable the product is, and, if desirable, the psychological energy to overrule the craving for it. The desirability of a product depends on all kinds of sensory inputs (Vohs and Faber 2007). However, desires are more than visceral reactions and are subject to historical and societal trends (Belk, Ger, and Askegaard 2003). The willpower to resist temptations is considered finite and most consumers regularly succumb (Baumeister 2002). Nevertheless, lacking willpower to overrule immediate temptations is socially condemned and considered immature (Zhang and Shrum 2009).

Impulsive purchase behavior is often approached as a problem of self-regulation and/or self-control. Self-regulation and self-control are very often used interchangeably, but do have some distinct features (Fitzsimons and Bargh 2004; McCullough and Willoughby 2009; Carver and Scheier 1998). Self-regulation involves the regulation of behavior in the pursuit of desired goals, not necessarily deliberative or effortful. Self-control on the other hand, refers to an individuals' ability to abstain from immediate desires in the light of earlier selected goals.

When exerting self-control, individuals deliberately try to adjust their actions with predetermined rules, standards, values and goals in order to avoid feelings of guilt, shame or disapproval by others. Self-control requires effort and is viewed as a finite power that regularly fails. Self-regulation on the other hand is a more homeostatic process that automatically adjusts behavior. Self-regulation involves the autonomous selection of goals and desires. Both processes can evoke similar outcomes, but for different reasons. For example, people could refrain from eating cookies because they do not find it desirable (self-regulation) or because they do not want to gain weight but still like them (self-control). Self-regulation thus refers to the general desirability or intrinsic liking of a product. Self-control involves the willpower or psychological strength to overrule initial longing for a product.

The conceptual distinction between self-regulation and self-control is illustrated by Carver and Scheier's (1998) model of behavioral regulation. Central to their theory is the view that self-regulation occurs at a more abstract level than self-control as it involves the selection of a particular set of reference goals and values. For example, healthiness and taking proper care of your body could serve as a self-regulatory goal. Self-control on the other hand is viewed as a dynamical mechanism that brings behavior into line with the selected values and goals through the operation of feedback loops. The first step in this mechanism involves the gathering of inputs and information about the current state of the selves. The next step is to compare this information to a reference value (e.g., norms and goals). If there is a discrepancy between the current state and the reference values, action should be undertaken to adjust behavior. For example, drinking alcohol could be in conflict with health goals. Refusing alcohol when it is offered is the action needed to bring behavior in line with the preselected norms and values. If there is no discrepancy, no actions will be undertaken. This process of feedback loops and the willpower to alter behavior is defined as self-control.

Norms and values can be adopted for intrinsic reasons or because people feel an external coercion to do so (Ryan and Deci 2000). When accepted for external reasons, behavioral adjustment occurs less automatic and more self-control effort will be needed. For example, people may abstain to drink alcohol because it is socially unwanted but still like to drink it and thus have to suppress their thirst for alcohol. In one of the studies by Vohs and Faber (2007), half of the participants had to carry out a thought suppression task by attempting not to think about a white bear for 6 minutes. Afterwards, the participants that exerted control of their thoughts demonstrated greater impulse buying tendencies. The suppression of thoughts depleted self-control resources and made subsequent self-control endeavors less successful. Self-regulation, on the other hand, should not be subject to mental fatigue as it refers to the

intrinsic liking or disliking of a product. When a certain product is not perceived as tempting, no efforts should be undertaken to refrain from buying it. By now, it should be clear that self-regulation and self-control are related to each other but do have some distinct features. Interestingly, both forms of behavioral regulation are known to operate in a religious belief system (McCullough and Willoughby 2009; Ryan, Rigby, and King 1993; Allport and Ross 1967).

2. RELIGION AND BEHAVIORAL REGULATION

Religion is defined as a system of beliefs and practices which unite in a moral community (Durkheim 1912). Religions provide a collective consciousness and encompass moral forces that discriminate between what is approved and what is forbidden. Throughout history, religion has been a determining social force that regulates society and offered some evolutionary benefits (Weber 1920). For example, the protestant work ethic promoted an ascetic life with hard work as the essential prerequisite to successfulness. Research by Ryan et al. (1993) has demonstrated that religion's intrusive rules are adopted for different reasons. Religions' moral force can be intrinsically adopted because of the compelling arguments or because of approval based pressures. Interestingly, religion's functional impact on behavior is contingent on its degree of internalization. If religious beliefs are intrinsically adopted, behavioral regulation is labeled as *identification* and occurs more volitional and autonomously. *Introjected regulation* refers to behavioral change evoked by religion because of approval based pressures.

Similar to self-regulation, identification involves the selection of goals and values on a higher level, and evokes autonomous reactions. For example, if a religion considers gambling as sinful and this value is intrinsically recognized, followers will never be tempted to gamble and automatically reject it. This is different for introjected regulation that occurs when individuals recognized a certain value, do not intrinsically accept it, but still abide it because of a concern with what others might think. Thus, similar to self-control, introjected regulation implicates an inner twist between intrinsic wants and discipline based pressures. An example of introjected regulation would be the abstention of gambling, not because you do not want it but because you are concerned with what others might think. Hence, religion can steer (impulsive) behavior in two separate ways. Following Hoch and Loewenstein's (1991) conceptualization of impulsive consumption, religious belief systems can both, but

independently affect the desirability of a product and the willpower to control the desirability for it.

3. RELIGION AND IMPULSIVE CONSUMPTION

Despite the potential straightforward interconnectedness between religiosity and impulsive purchase behavior, no direct causal influences from religion on impulsive purchase behavior have been documented. There is however correlational evidence supporting a link between religiosity and lower levels of substance abuse (Gorsuch 1995), initiation of marijuana and alcohol use for young adolescents (Kim-Spoon et al. 2014), lower levels of delinquency (Benda and Corwyn 1997), age of having sexual intercourse for the first time (Meier 2003), educational achievement (Lee 2002), more frequent dentist visits (Koenig, King, and Carson 2012), and wearing seatbelts (Wallace and Forman 1998). These kinds of behaviors could easily be associated with traits such as risk-seeking (Zuckerman and Kuhlman 2000) and need for stimulation (Carrol, Zuckerman, and Vogel 1982), which are all closely related to impulsive purchase behavior. Indeed, this correlational evidence suggests a general link between religiosity and a general tendency to regulate behavior. Though, it does not allow to determine any causal influences or to disentangle different forms of behavioral regulation.

Earlier research established a causal relationship between religiosity and willpower, but did not focus on impulsive purchase behavior. Shariff and Norenzayan (2007) demonstrated that subtle religious primes (scrambled sentence task) encouraged pro-social behavior in a dictator game. More recently, Rounding et al. (2012) showed that the same religious prime gave participants the courage to endure more discomfort (drinking a mixture of orange juice and vinegar), were willing to wait longer for a larger monetary reward and performed better on the STROOP-task. This evidence confirms religion's causal influence on self-control and willpower in general. Nonetheless, Rounding et al. (2012) did not address purchase behavior and they focused on self-control but not on self-regulation. They did not investigate how religious primes could affect the desirability of a product. Building on Rounding et al.'s (2012) earlier findings, it is not evident to predict whether individuals will refrain from impulsive consumption because they are concerned with approval based pressures or because they do not feel any urges or desires to buy the product.

Impulsive purchases occur because consumers become attracted by a stimulus or product. When consumers suddenly become attracted by a product, the ability to control their impulses will determine whether they will buy the product or not. One reason not to spend money could be approval based pressures. When concerned with approval based pressures, it requires effort to overrule the desire for a product. However, impulsive purchase behavior could also be regulated by religion in a more volitional way. Deeper rooted religious norms and values can steer behavior in a more automatic fashion. For example, if certain religious values and norms disapprove a specific kind of purchase consumers may simply not be attracted by the product. In such cases, the product is not desirable and no problem of willpower to resist will exist. An example would be eating pork meat for Muslims. When confronted with the possibility to eat pork, intentions or behavior should not be changed because they intrinsically disapprove this kind of meat. In such a situation, no problem of self-control will occur because there is no temptation or incipient urge.

Disentangling both explanatory processes is important because the deliberative adjustment of behavior has shown to be less effective in the longer run. Automatic or volitional steering of behavior is more enduring. Presumably, religiosity steers impulsive purchase behavior through both processes. We aim to test how religion affects impulsive purchase behavior by either affecting the desirability of a product and/or by offering the willpower to overrule intrinsic but condemned urges.

Religion steers impulsive behavior by differentiating between moral and sinful alternatives. Religious norms and values forbid the purchase or consumption of so called “heathen” products. However, religions do not merely discriminate between what is good versus bad. Religious belief systems recognize that some minor sins are sometimes inevitable. Indeed, religions differentiate between more and less sinful behavior (Kierkegaard 2007). For example, Catholicism differentiates between mortal sins and venial sins. Mortal sins condemn a person to hell after death; venial sins do not condemn a person to hell but only cause a partial and temporary loss of grace. It seems straightforward that indulging on cookies is less sinful than substance use. Nevertheless, religious definitions of sins are abstract and typically remain silent about how to practically define minor versus major sinful behavior. Practical guidance of what is sinful largely depends on how individuals interpret it and on how opinion leaders put it forward (Riley 2008).

Fishbach and Converse (2011) argue the existence of two different self-regulatory problems. The first one is the traditional dilemma conceptualized as a conflict between urging desires and longer term goals. The second type of dilemma is the so-called epsilon temptation.

These kinds of temptations have negligible negative consequences in the long run, unless the behavior becomes repetitive. Similar to minor sinful behavior, epsilon temptations are less problematic when incidental. For example, indulging in cookies is not really a (health) problem if it occurs seldom. As religions differentiate between different kinds of sins, it is likely that exposure to religion can have different effects depending on how sinful the behavior actually is.

Religions represent a cultural mechanism that works in function of the group by rewarding behavior that benefits the group and punishing behavior that is detrimental for the common good (Baumeister 2010). Most sinful is behavior that endangers the group. For example, the consumption of alcohol should be considered very sinful because it potentially leads to addiction and ultimately to the destabilization of society. Consequently, religion should have a negative impact on the evaluation and consumption of alcohol. Yet, not all sinful behavior has a direct negative impact on society. Indulging behavior is considered to be egoistic because it preoccupies people with their own pleasure instead of the common cause. Getting a personal treatment at a local spa is not harmful for society, but it puts personal pleasure above other things. Hence, religion could activate a concern with approval based pressures because such behavior is rather egoistic instead of social. Religions should be more tolerant on such behavior because it does not directly affect the stability of the group, but could still activate a concern with approval based pressures. In what follows, we speculate that the distinction between minor and major sinful behavior will determine the desirability of a product and thus could also determine which form of behavioral regulation that will come into play. We hypothesize that religious primes will incite individuals to refrain from all types of sinful behavior. Yet, we assume that religious primes will urge to refrain from major versus minor sinful behavior for different reasons. In particular, we speculate that minor sins are a matter of self-control and willpower. Major sins on the other hand could be a matter of desirability. Religious systems have some clear rules about what is normatively good or bad, but sometimes temporarily condone minor sins. If a certain product is seriously wrongful and immoral from a religious point of view, religious primes could remind consumers that the product is not desirable and hence limit its consumption. If a product is perceived as moderately sinful from a religious point of view, religious primes could remind consumers that the product is unwanted but sometimes condoned. Hence, it is less likely that religious primes will affect the desirability of a product than, but will rather activate a concern with approval based pressures.

4. STUDY OVERVIEW

Across three studies we tested how religion can affect impulsive purchase behavior. In a first study we compared U.S. state-level data on religiosity with statistics on credit card indebtedness. Credit card debt has several times been associated with impulsive spending behavior (Rick, Cryder, and Loewenstein 2008; Wilcox, Block, and Eisenstein 2011). We tested whether religious affiliation can predict credit card debt by relying on real-world data. In study 2 and 3 we experimentally manipulated religiosity to investigate the underlying processes. To test the different processes of behavioral regulation, we used a less sinful product in study 2 compared to study 3. Study 2 conceptualized impulsive purchase behavior as the willingness to spend money on a pleasurable massage at a spa. Study 3 investigates the willingness to spend money on a case of wine. The extent to which a certain product or behavior is considered sinful is not always logically deductible and largely depends on the evaluation of opinion leaders (Riley 2008). Consequently, the sinfulness of a product depends on its subjective judgment. To ascertain that getting a massage was considered less sinful than drinking alcohol we performed a pretest. Pretests with U.S. participants through MTurk ($n=40$) showed that drinking alcohol was considered as more sinful ($F(1, 39) = 6.01, p = .02$), a bigger violation of religious principles ($F(1, 39) = 15.56, p < .001$) and was rated worse than getting a massage ($F(1, 39) = 31.32, p < .001$). In study 2 we tested if religious primes could urge people to deliberately refrain from desirable products because of approval based pressures. In study 3 we tested whether religious primes can also affect the desirability or intrinsic liking of a product.

5. STUDY 1: RELIGIOSITY AND CREDIT CARD DEBT IN THE U.S.

The goal of study 1 was to test if religious people buy less on impulse. Prior research has shown that impulsive spending could result in higher levels of household debt (Schorr 1998) and credit card debt in particular (Wilcox, Block, and Eisenstein 2011). Credit cards are used as a guilt reducing tool to purchase pleasurable products because it makes the transfer of money less salient (Thomas, Desai, and Seenivasan 2011). We obtained the state-level average credit card debt per borrower from a TransUnion (<http://www.transunioninsights.com>) credit report in 2013. In 2013, a credit card debtor in the U.S. carried an average of \$4,965 credit card debt. Data from religiosity across the U.S. was

obtained from the Pew Research Center's (<http://www.pewresearch.org>) most recent Religion Landscape Survey in 2008. Approximately 35,000 citizens of Continental U.S. who were older than 18 years were interviewed through telephone calls about their religious affiliation. This survey includes information on their self-reported religious beliefs and practices. On average, 78.4% reported being Christian (Protestants and Catholics), 4.7% of the respondents adhered another religion (Mainly Jewish, Buddhists and Muslims) and 16.9% reported being unaffiliated. Besides information on religious affiliations the data also contains percentages about general believe in God (absolutely certain, fairly certain, not too certain, do not believe), frequency of prayer (at least once a day, once a week, few times a week, few times a month, seldom or not), attending religious services (at least once a week, once or twice a month, seldom or not) and how important religion is for someone (very important, somewhat important, not too important). For each question, we calculated weighted indexes based on the different options and the portion of people that indicated the options.

We also wanted to control for potential confounds. Earlier research (Griskevicius et al. 2012) demonstrated that state level average credit card debt can be attributed to the portion of men living per state. In addition, social economic status is likely to affect impulsive purchase behavior and thus also credit card debt (Wood 1998). To be able to control for these confounds, we gathered information on gender ratios (calculated as the number of males per 100 females per state in 2010), gross domestic product (GDP) per capita (per state for 2008), and educational attainment (percentage of people that finished high school per state in 2008) from the U.S. Census Bureau (www.census.gov).

5.1 Results

In accordance with our predictions, correlational analysis yielded a negative relation between the state-level average percentage of affiliated people and average credit card debt per borrower for each state ($r = -.35, p < .01$). Subsequently, we tested for potential confounds. The more men living per state correlated with lower percentages of affiliated people per state ($r = -.31, p < .05$). However, the portion of men living per state was not related to credit card debt statistics ($r = .03, p = .85$). There was a weak correlation between our measure of credit card debt and GDP per capita ($r = .25, p = .08$), but GDP per capita did not correlate with the portion of affiliated people per state ($r = -.20, p = .17$). The average percentage of affiliated people per state correlated negatively with the average percentage of

people that finished high school ($r = -.44, p < .001$). Finishing high school was not related to credit card debt ($r = -.01, p = .92$). Importantly, controlling for gender ratios, GDP per capita and educational attainment did not significantly affect the negative correlation between percentage affiliated and credit card debt ($\beta = -.38, p < .01$). To test whether credit card debt also correlated with the other religious beliefs and practices, we calculated a weighted index for each question. The correlation matrix below (table 1) displays the partial correlations (controlling for gender ratios and educational attainment) between the measures of religiosity and credit card debt.

Each measure of religiosity correlated negatively with credit card debt. A factor analysis revealed that all these questions measure one construct. Based on this analysis, we calculated an overall index of religiosity ($\alpha = .97$) which was also negatively correlated with credit card indebtedness ($r = -.44, p < .01$).

Table 1. Partial correlations between religiosity and credit card debt

	Credit card debt	Religious affiliation	Religion's importance	Attending services	Believe in god	Frequency of prayer
Religious affiliation	-.38*					
Religion's importance	-.42*	.84**				
Attending services	-.43*	.87**	.93**			
Believe in god	-.40*	.80**	.90**	.86**		
Frequency of prayer	-.44*	.75**	.90**	.88**	.95**	
Overall index	-.44*	.84**	.96**	.95**	.97**	.97**

* $p < .01$ ** $p < .001$

5.2 Discussion

The merit of this first study is that we are able to document religions' influence on impulsive consumption with real-life data. However, credit card debt served as a proxy measure of impulsive spending behavior. We did not actually measure impulsive purchase

behavior. Another shortcoming that comes with the use of real-world data is that we were not able to control for all possible confounds. For instance, the average number of credit cards issued per person could confound our results. Yet, the credit card report that we relied on did not communicate such information. In addition, the correlational evidence of this first study does not allow making causal inferences. Nor does it allow us to assess process evidence or to differentiate between the two forms of behavioral regulation. We aim to address these shortcomings in an experimental set-up.

6. STUDY 2: RELIGIOUS PRIMES AND WILLINGNESS TO SPEND MONEY ON A MASSAGE

The goal of study 2 is twofold. First, we aim to experimentally replicate the findings of the first study by showing that reminders of religiosity refrain people from buying hedonically tempting products. Priming individuals with religious concepts should activate a value system that allows discriminating between what is right and wrong. Besides the activation of a value system, exposure to religion also offers individuals the energy needed to overrule impulsive responses (Rounding et al. 2012). Second, we hope to offer some procedural evidence. Study 2 investigates how reminders of religion could affect the willingness to spend money on a massage. As mentioned, getting a massage was pretested as a minor sin. We argued that exposure to religiosity will not affect the liking or desirability of minor sinful behavior. Instead, people will rather refrain from it because of approval based pressures. Documenting this relationship is the main goal of study 2. In this study we also use a hedonic versus utilitarian framing of the massage. In the hedonic condition the massage was framed as pleasurable, in the utilitarian condition we told that the massage was on medical advice. Health and sanity are religious ideals (Riley 2008), hence we expect that reminders of religion will only affect the willingness to spend money on the hedonic massage. In the current study, we differentiate between a hedonic versus utilitarian massage because we do not expect that religiosity will affect the willingness to spend money on a utilitarian product.

6.1 Method

The current study has a 2×2 between subjects factorial design. All respondents were randomly assigned to the conditions. To start, we primed the participants either with religious

or neutral concepts. Subsequently, they had to indicate to what extent they were willing to spend \$100 on a hedonic or a utilitarian massage. In total, 154 respondents ($M_{age} = 35.12$, $SD = 12.22$; 54% male and 46% female) participated in an online experiment that was offered through Amazon Mechanical Turk and received \$.25. Nine respondents were excluded from the original sample because they did not answer a control question correctly.

We relied on an already established scrambled sentence task to prime religiosity (Rounding et al. 2012; Shariff and Norenzayan 2007; Srull and Wyer 1979). The scrambled sentence task required the participants to unscramble five-word sentences by dropping an irrelevant word. In total, the participants had to unscramble ten sentences. In the religious prime condition, five of the ten sentences contained a religious word (God, spirit, divine, prophet or sacred). For example, the scrambled sentence “dessert divine was for the” could be unscrambled by making “the dessert was divine”. The remaining sentences contained only neutral words. In the neutral prime condition, all sentences contained neutral words. For example, the neutral scrambled sentence “sky the seamless blue is” could be unscrambled by “the sky is blue”. Upfront, we asked the participants to make logical and grammatically correct sentences.

After the priming task the respondents were asked to what extent they would be willing to spend money (\$100) on a hedonic versus utilitarian massage. In the hedonic condition they read: “*Imagine that you find massages very pleasurable (no need to imagine if it is actually true). You shop around and find an excellent spa that offers a pleasurable massage for \$100.*” Respondents in the utilitarian condition read the following scenario: “*Imagine that your back has been bothering you lately. You shop around and find an excellent clinic that offers a therapeutic massage for \$100. Your insurance does not cover the cost.*” Subsequently, we asked if they would be willing to purchase the massage (1 definitely will not; 7 definitely will). Afterwards we asked how desirable the massage is and if taking the massage would evoke concerns with approval based pressures. The already established measures that assess the intrinsic preference for something and the concern with approval based pressures are domain specific, thus we constructed our items by adapting a previously established one (Ryan, Rigby, and King 1993). We assessed the intrinsic desirability (“I would greatly enjoy the massage”, “The massage would offer me a great experience”, “A massage is truly fun”, “A massage would be very satisfying to me”; $\alpha = .85$) and concern with approval based pressures (“I would feel bad if I would get the massage”, “I would feel guilty if I would get the massage”, “I would feel ashamed if I would get the massage”, “Others would disapprove me if I would get the massage”; $\alpha = .92$) on 7-point scales (1 strongly disagree; 7 strongly

agree). To ascertain the validity of our scale, we ran a factor analysis (KMO = .82, Bartlett's test of sphericity: $\chi^2(28) = 850.83, p < .001$) which yielded two dimensions based on the scree plot and factor loadings. In addition, the correlation between both dimensions was negative ($r = -.19, p < .05$).

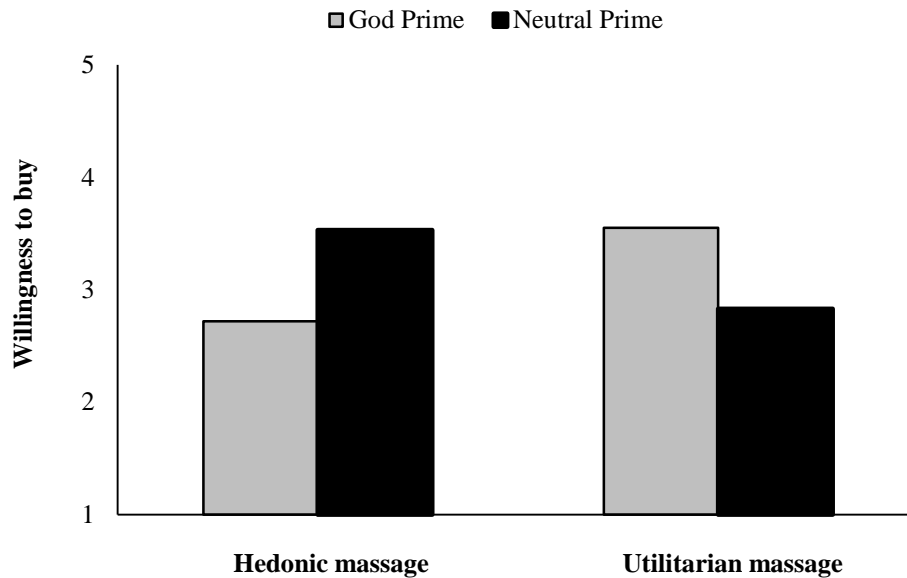
At the end of the study we also asked the respondents whether they considered themselves to be Protestant, Catholic, Mormon, Jehovah's witnesses, Muslim, another religion or unaffiliated.

6.2 Results

In total, 83 respondents reported being religiously affiliated (26 Protestants, 27 Catholics, 3 Mormons, 1 Jehovah's witnesses, 1 Muslim and 25 were affiliated with another religion). The affiliated versus unaffiliated respondents were evenly distributed across the religious and neutral prime conditions ($\chi^2(1, 154) = 0.92, p = .34$). In what follows, we report first the willingness to spend on the massage. Subsequently, we report evidence on the mediating processes.

Willingness to buy: Overall, the religious ($M = 3.16, SD = 1.56$) versus neutral ($M = 3.17, SD = 1.61$) scrambled sentence task did not affect willingness to buy the massage ($F(1, 153) = .025, p = .87$). Nor was the main effect of the hedonic ($M = 3.14, SD = 1.51$) versus utilitarian massage significant ($M = 3.19, SD = 1.65; F(1, 153) = .06, p = .80$). More importantly, the interaction (see graph 1) between the priming task and type of massage was significant ($F(1, 153) = 9.40, p < .01$). Follow-up analysis revealed that the respondents' willingness to buy the hedonic massage dropped if they received the religious prime ($M = 2.72, SD = 1.26$) instead of the neutral one ($M = 3.53, SD = 1.64; F(1, 150) = 5.00, p = .03$). Participants who were primed with religious concepts were also less willing to buy the massage when it was hedonically framed ($M = 2.72, SD = 1.26$) compared to the utilitarian framing ($M = 3.55, SD = 1.71; F(1, 150) = 4.01, p = .04$). After receiving the religious prime, the respondents were more willing to spend \$100 on a utilitarian massage ($M = 3.55, SD = 1.71$) compared to a hedonic massage ($M = 2.83, SD = 1.52; F(1, 150) = 4.40, p = .04$). Lastly, the respondents were more willing to spend money on the hedonic massage ($M = 3.53, SD = 1.64$) compared to the utilitarian massage ($M = 2.83, SD = 1.52; F(1, 150) = 5.43, p = .02$) after completing the neutral scrambled sentence task.

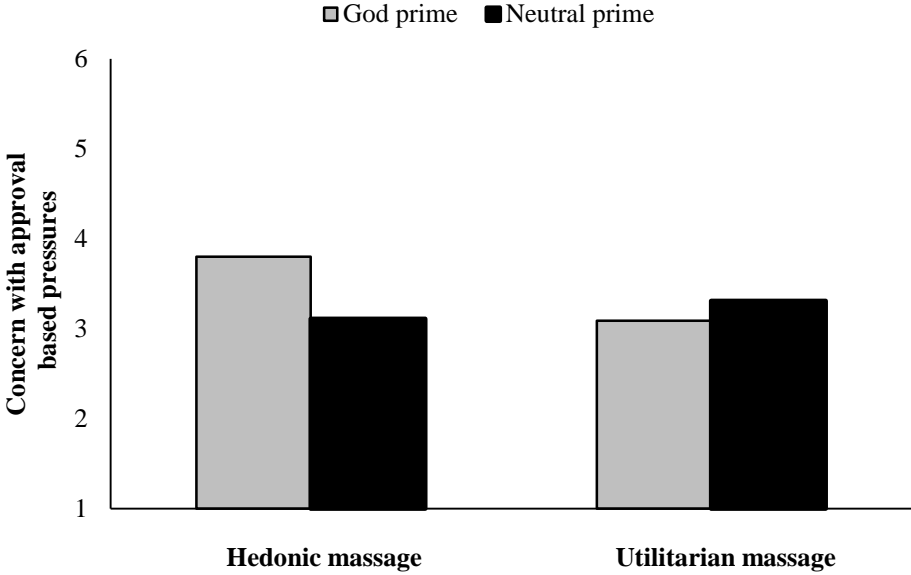
Graph 1. Scrambled sentences × Type of message on willingness to buy



Desirability of the message: Most noteworthy is that all respondents scored relatively high on this measure, indicating that messages are generally perceived as desirable. There were no significant differences in desirability of the message after the respondents were primed with the religious ($M = 5.29$, $SD = 1.28$) versus neutral concepts ($M = 5.24$, $SD = 1.33$; $F(1, 153) = .078$, $p = .78$). Nor were there significant difference across the hedonic ($M = 5.40$, $SD = 1.27$) versus utilitarian conditions ($M = 5.15$, $SD = 1.32$; $F(1, 153) = 1.417$, $p = .24$). Neither was the interaction significant ($F(1, 153) = .136$, $p = .71$).

Concern with approval based pressures: The main effect of the religious prime ($M = 3.42$, $SD = 1.49$) versus neutral prime ($M = 3.21$, $SD = 1.50$) on concern with approval based pressures was not significant ($F(1, 153) = .984$, $p = .32$). Nor was it affected by the hedonic ($M = 3.45$, $SD = 1.49$) versus utilitarian framing of the message ($M = 3.20$, $SD = 1.50$; $F(1, 153) = 1.14$, $p = .29$). Yet, the interaction (see graph 2) demanded further inspection ($F(1, 153) = 3.54$, $p = .06$). Post hoc analysis yielded that the religious prime ($M = 3.80$, $SD = 1.46$) evoked a bigger concern with approval based pressures for the hedonic product than the neutral prime ($M = 3.11$, $SD = 1.45$; $F(1, 150) = 3.97$, $p = .04$). In addition, the religious prime evoked these pressures significantly more in the hedonic condition ($M = 3.80$; $SD = 1.46$) than in the utilitarian one ($M = 3.09$, $SD = 1.44$; $F(1, 150) = 4.29$, $p = .04$).

Graph 2. Scrambled sentences × Type of massage on concern with approval based pressures



Within the neutral prime condition, there was no significant difference between the hedonic ($M = 3.11, SD = 1.45$) and utilitarian ($M = 3.31, SD = 1.56$) manipulation ($F(1, 150) = .34, p = .56$). Neither was there a significant difference between the religious ($M = 3.09, SD = 1.44$) and neutral prime ($M = 3.31, SD = 1.56$) within the utilitarian condition ($F(1, 150) = .41, p = .52$).

Mediation analysis: All mediation analyses were performed by using the Preacher and Hayes (2008) macro to estimate the indirect effects (model 8). All the indirect effects were estimated using 10,000 bias-corrected bootstrap resamples. In this section we wanted to test whether willingness to spend across the conditions could be explained by desirability of the massage and/or a concern with approval based pressures. First, we tested if the desirability mediates type of prime × type of massage on willingness to spend. The indirect effect of desirability was not significant ($\beta = -.07, LL = -.46; UL = .27$). Second, we tested if the willingness to buy the massage across type of prime × type of massage could be explained by the differences in concern with approval based pressures. This mediation analysis revealed a positive and significant indirect effect of concern with approval based pressures ($\beta = .32$) as the estimated 95% confidence interval did not include zero ($LL = .02; UL = .79$).

Further analysis yielded a significant conditional indirect effect of concern with approval based pressures for the hedonic massage after being primed with religion ($\beta = -.20, LL = -.55;$

UL = -.01). In addition, the conditional direct effect of the hedonic manipulation after receiving the religious prime was no longer significant when controlling for concerns with approval based pressures ($\beta = -.60$; $t(154) = -1.76$, $p = .08$). Hence the effect of religion in the hedonic condition is mediated by concern with approval based pressures. The religious prime did not affect the conditional indirect effect of concern with approval based pressures in the utilitarian condition ($\beta = .08$, LL = -.14; UL = .34). When controlling for concern with approval based pressures, the conditional direct effect of the utilitarian message after the religious prime remained significant ($\beta = .65$; $t(154) = 1.96$, $p = .05$). To summarize, we offer an empirical explanation for the reduced willingness to spend on the hedonic message but not for the increased willingness to spend on the utilitarian message.

6.3 Discussion

In this second study we experimentally demonstrated that religious primes reduced the willingness to spend money on a hedonic message. These results confirm the causal influence from religiosity on impulsive purchase behavior. Up to now, only correlational evidence documented such link. We also provide some procedural evidence and show why religious primes could limit impulsive purchase behavior. In particular, the respondents found the message desirable (cf., relatively high score on the intrinsic pleasure scale). Yet, approval based pressures urged to exert self-control and tied down their willingness to spend money on the hedonic message. Furthermore, the religious condition mirrors the neutral condition. Within the neutral condition, the respondents were more willing to spend on the hedonic message. Within the religious condition, the respondents were more willing to spend on the utilitarian message. The higher willingness to spend money on the hedonic message within the neutral condition could be possibly attributed to the higher autonomy consumers usually experience in hedonic purchase situations (cf., Botti and McGill 2011) which may boost spending behavior. More unexpected is the finding that religious primes encouraged to spend money on the utilitarian message. A possible explanation could be the framing of the utilitarian message; we framed it as something that was ought to do. Presumably, reminders of religiosity incited the participants to take proper care of their body which is encouraged by religions (Riley 2008).

7. STUDY 3: RELIGIOUS PRIMES AND THE WILLINGNESS TO SPEND MONEY ON WINE

In study 2, we only tested impulsive purchase behavior regarding moderately sinful behavior. We argued that concerns with approval based pressures could regulate moderately sinful behavior. We also hypothesized that reminders of religion could reduce the intrinsic desirability of major sinful product and hence urge to refrain from impulsive consumption for a different reason. Our pretest revealed that the consumption of alcohol is considered as more sinful than getting a massage. In study 3 we hope to test how religion could alter consumers' intrinsic desire for alcohol. In particular, we investigate how religion could affect the intrinsic desirability of alcohol and consequently the willingness to spend money on it.

7.1 Method

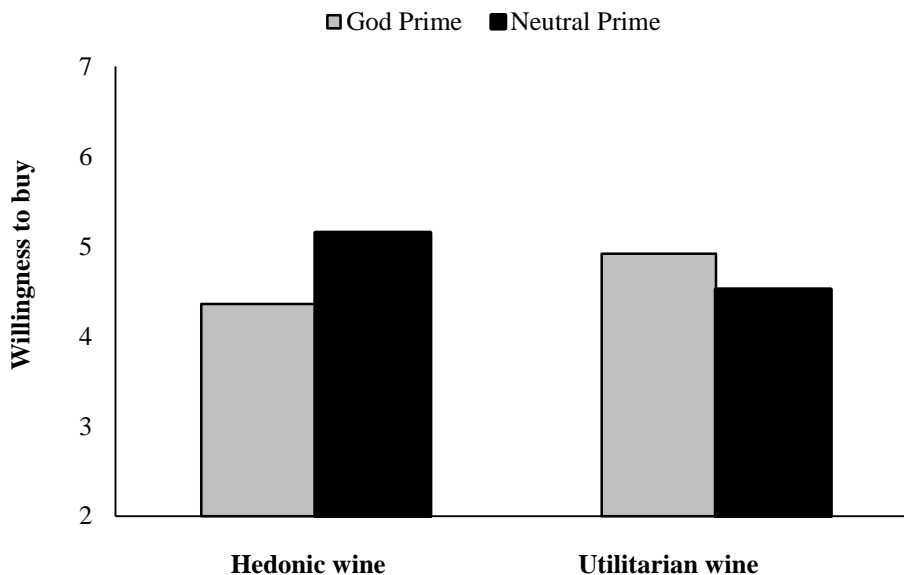
In total, 158 U.S.-respondents ($M_{age} = 35.06$ $SD = 11.73$, 45% male and 55% female) were recruited through Amazon Mechanical Turk and got \$.25. Nine respondents were excluded from the original sample because they did not answer correctly on the control question. Study 3 has a 2×2 between subjects factorial design. All respondents were randomly assigned to the conditions. Identical to the previous study, the respondents first had to unscramble 10 sentences to prime them either with religious or neutral concepts. After completing the priming task, the respondents had to imagine either a hedonic or utilitarian scenario. In the hedonic condition they read the following scenario: *“Imagine that you like to drink wine (no need to do so if it is actually true). You look around and find a case with six bottles of good wine for \$80.”* In the utilitarian condition they were instructed to consider the healthy benefits of drinking wine: *“Imagine that you have been suffering from high cholesterol and your physician told you that moderately drinking red wine could offer you healthy benefits. Wine reduces blood clotting, by thinning the blood and dampening proteins that promote blood clots. You look around and find a case with six bottles of wine for \$80.”* After reading one of the two scenarios we asked whether they would be willing to purchase the case of wine (1 definitely will not; 7 definitely will). To measure concern with approval based pressures ($\alpha = .92$) and desirability of the wine ($\alpha = .92$) we adopted the questions from study 2. Both scales were again negatively correlated ($r = -.36$, $p < .001$). At the end of the survey, the respondents were asked to report their religious affiliation.

7.2 Results

In total, 80 participants considered themselves to be religiously affiliated (38 Protestants, 20 Catholics, 2 Mormons, 1 Muslim, 21 were affiliated with another) and 76 were unaffiliated. The (un)affiliated participants were evenly distributed across the religious and neutral conditions ($\chi^2(1, 158) = 0.08, p = .78$). First, we analyzed the willingness to spend money on the wine. Next, we examined the effects on intrinsic desirability of the wine and concern with approval based pressures. Lastly, we tested whether these forms of regulation could offer some procedural evidence.

Willingness to buy: On average, the religious prime ($M = 4.57, SD = 1.46$) did not affect willingness to spend money on the case of wine ($M = 4.81, SD = 1.52; F(1, 157) = .66, p = .42$). Nor were the respondents willing to spend more (or less) money on wine in the hedonic ($M = 4.72, SD = 1.50$) versus the utilitarian condition ($M = 4.68, SD = 1.50; F(1, 157) = .02, p = .88$). However, the interaction (see graph 3) between the manipulation and the hedonic versus utilitarian condition was significant ($F(1, 157) = 6.11, p = .02$).

Graph 3. Scrambled sentences \times Type of wine on willingness to buy

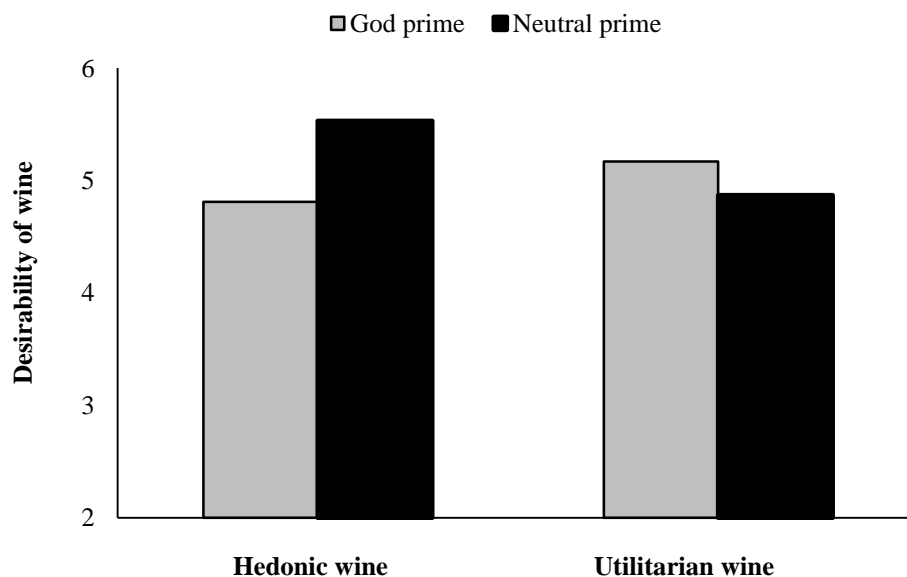


Follow-up analysis clarified that the religious prime reduced the willingness to spend money on the hedonically framed wine ($M = 4.36, SD = 1.61$) relative to the neutral prime ($M = 5.15,$

$SD = 1.25$; $F(1, 154) = 6.14, p = .014$). Willingness to spend money on wine was lower after the religious prime for the hedonic ($M = 4.36, SD = 1.61$) compared to the utilitarian condition ($M = 4.92, SD = 1.09$), but not significantly ($F(1, 154) = 2.42, p = .12$). After unscrambling the neutral sentences, the respondents were more likely to spend money on the wine when it was hedonically framed ($M = 5.15, SD = 1.25$) than when it was utilitarian framed ($M = 4.52, SD = 1.68$; $F(1, 154) = 3.87, p = .05$). Willingness to spend money on the utilitarian framed wine did not differ when being primed with religious ($M = 4.92, SD = 1.09$) or neutral concepts ($M = 4.52, SD = 1.68$; $F(1, 154) = 1.23, p = .27$).

Desirability of the wine: The religious ($M = 4.94, SD = 1.49$) versus neutral ($M = 5.17, SD = 1.40$) scrambled sentence task did not affect the desirability of consuming alcohol ($F(1, 157) = .786, p = .38$). Nor did the hedonic ($M = 5.13, SD = 1.50$) versus utilitarian ($M = 4.98, SD = 1.38$) framing of alcohol affect its desirability ($F(1, 157) = .39, p = .53$). However, the interaction (see graph 4) between both factors was significant ($F(1, 157) = 4.79, p = .03$).

Graph 4. Scrambled sentences \times Type of wine on desirability of wine



When the consumption of alcohol was hedonically framed, the participants found alcohol less desirable after exposure to the religious primes ($M = 4.81, SD = 1.67$) when compared to the neutral condition ($M = 5.53, SD = 1.16$; $F(1, 154) = 5.39, p = .02$). After religious exposure, the consumption of alcohol was not evaluated differently when it was framed as hedonic ($M =$

4.81, $SD = 1.67$) or utilitarian ($M = 5.17$, $SD = 1.09$; $F(1, 154) = 1.09$, $p = .30$). Participants who completed the neutral prime found the consumption of alcohol more desirable when it was framed hedonically ($M = 5.53$, $SD = 1.16$) relative to utilitarian ($M = 4.87$, $SD = 1.52$; $F(1, 154) = 4.477$, $p = .04$). Framing the consumption of alcohol in a utilitarian way did not alter intrinsic evaluations when unscrambling the religious ($M = 5.17$, $SD = 1.09$) versus neutral sentences ($M = 4.87$, $SD = 1.52$; $F(1, 154) = .753$, $p = .39$).

Concern with approval based pressures: On average ($M = 5.26$, $SD = 1.44$) the respondents scored relatively high on this measure, indicating that the consumption of alcohol is generally disapproved. The main effect of the religious ($M = 5.37$, $SD = 1.53$) versus neutral prime ($M = 5.17$, $SD = 1.03$) was not significant ($F(1, 157) = .93$, $p = .34$). The main effect of the hedonic ($M = 5.26$, $SD = 1.47$) versus utilitarian manipulation ($M = 5.27$, $SD = 1.04$) was also not significant ($F(1, 157) = .04$, $p = .84$). Neither was their interaction significant ($F(1, 157) = .001$, $p = .98$).

Mediation analysis: The goal is to test whether type of prime \times type of wine predicting willingness to spend money on the case of wine is mediated by desirability of wine and/or a concern with approval based pressures. First, we tested the mediating effects of desirability of the wine (Preacher and Hayes 2008). The indirect effect of intrinsic regulation was significant ($\beta = -.77$, $LL = -1.52$; $UL = -.13$). Further inspection showed a significant conditional indirect effect of desirability in the hedonic condition after being primed with religious concepts ($\beta = -.54$, $LL = -1.05$; $UL = -.10$). The conditional direct effect of the hedonic condition after receiving the religious prime was no longer significant when controlling for desirability ($\beta = -.25$; $t(154) = -1.12$, $p = .26$). Consequently, the reduced willingness to spend money on the hedonic wine after receiving the religious prime is mediated by a reduced desirability. In addition, the conditional indirect effect of desirability was not significant for the utilitarian condition after the religious prime ($\beta = .23$, $LL = -.19$; $UL = .77$). The conditional direct effect of the utilitarian condition, after the religious prime, was not significant when controlling for desirability ($\beta = .17$; $t(154) = .69$, $p = .49$). Second, we tested if a concern with approval based pressures mediates the interaction explaining willingness to spend money on wine. This analysis did not yield a significant indirect effect of concern with approval based pressures ($\beta = -.01$, $LL = -.26$; $UL = .18$). Consequently, concern with approval based pressures is not a mediator in study 3.

7.3 Discussion

In study 3 we demonstrated that willingness to spend money on alcohol is contingent upon exposure to religious concepts. Priming individuals by means of a scrambled sentence task with religious concepts decreased the willingness to spend money on wine. Within the religious prime condition, the respondents did not express a higher or lower willingness to buy the hedonic versus utilitarian wine. This is contrary to study 2 in which the religious prime increased the willingness to spend on the utilitarian alternative. Presumably, it is more difficult to sell the health benefits of alcohol compared to massages which could explain this inconsistency across study 2 and 3. Similar to study 2, within the neutral prime condition, the respondents did express a higher willingness to spend money on the hedonic alternative compared to the utilitarian one. As in study 2, this may be attributed to differences in autonomy and freedom (cf., Botti and McGill 2011)

The willingness to spend money on wine was mediated by a reduced desirability. The current results support the idea that religion can affect the desirability of a product and subsequently influence impulsive purchase behavior. All the participants were concerned with approval based pressures associated with drinking alcohol. The experience of approval based pressures did not mediate the observed differences in willingness to spend.

A potential drawback of the current study is that we use the willingness to spend money on alcohol. Drinking alcohol is prohibited for Muslims, and could even be legally punished in some Muslim countries. Muslims' willingness to spend money on alcohol could thus be inappropriate. In spite of these concerns, only 1 self-reported Muslim participated in our study. Excluding this participant from the analyses did not alter our conclusions.

8. GENERAL DISCUSSION

The main goal of the current research was to discover how religiosity affects impulsive purchase behavior. Religion is known to affect behavior (Ryan, Rigby, and King 1993; Allport and Ross 1967) and triggers self-discipline (Rounding et al. 2012). Some earlier correlational evidence already suggested that religiosity could steer impulsive urges (e.g., Benda and Corwyn 1997; Gorsuch 1995; Meier 2003), but no causal explanatory mechanism has been identified. Earlier research by Ryan, Rigby, and King (1993) demonstrated that religion could change behavior for intrinsic reasons and/or because of a concern with approval

based pressures. Interestingly, these two forms of behavioral regulation also play a role in impulsive purchase behavior. Impulsive purchase behavior occurs because a product is viewed as desirable and consumers lack the ability to control their desires for that product (Hoch and Loewenstein 1991). The intrinsic valuation covers the desirability of a product, and one reason to take control over desires could be a fear for approval based pressures (e.g., guilt, shame or anxiety). We speculated that exposure to religion could inhibit impulsive purchase behavior for two different reasons. In particular, we investigated if the reason to abstain from impulsive purchase behavior is contingent upon the moral classification of the tempting impulse. We tested if a concern with approval based pressures regulates minor sinful behavior and that major sins are no longer perceived as desirable after being exposed to religious concepts.

We tested our predictions across three studies. In a first study we relied on secondary data to demonstrate that self-reported religious identity and participation in religious practices predicts U.S. state level averages of credit card debt. The strength of the first study is that we rely on real-world data. Unfortunately, secondary data often does not allow the exclusion of alternative explanations. In two experimental settings, we tried to experimentally replicate the findings of study 1 in a more controlled setting with a focus on the underlying processes. In study 2 we tested whether religious primes could affect the willingness to spend money on moderately sinful products (getting a massage). This experiment proved that religious primes reduced the willingness to spend on moderately sinful behavior because of a concern with approval based pressures. The participants found massages desirable, but feelings such as guilt and shame reduced the willingness to spend money on a hedonic massage after the religious prime. Initially, we added a utilitarian condition in this study because we expected that the religious prime would only affect the willingness to spend on the hedonically framed massage. Surprisingly, the religious prime also urged to spend money on the utilitarian massage. One possible explanation could be that exposure to religiosity also activated a health goal, which would explain the higher willingness to spend on a back pain relieving massage. In study 3, we tried to replicate our findings with a more severe sin (the consumption of alcohol). Again, the religious prime refrained people to spend money on wine when it was hedonically framed, albeit for a different reason. This time the reduced willingness to spend was mediated by an intrinsic devaluation of the product. Exposure to religious concepts does not only evoke a concern with approval based pressures, it can also hamper the intrinsic desirability of a major sinful product. We conclude that how religion affects impulsive purchase behavior is contingent upon the moral classification of the product at hand.

Moderate sins are monitored by a concern with approval based pressured. More severe sins are no longer desirable after being exposed to religious concepts.

The current findings contribute to the literature on religion and impulsive purchase behavior. Prior research did consider their connection, but never gave empirical proof of any causal mechanism. We advance knowledge on this topic by demonstrating a causal influence of religion on impulsive purchase behavior. Unscrambling sentences that contained religious words incited individuals to spend less money on hedonically tempting products. Prior research (Ryan, Rigby, and King 1993; Allport and Ross 1967) argued that religion can change behavior for different reasons or motivations. Our findings are the first to show that these different motivations also come into play for impulsive purchase behavior. In addition, we offer empirical support for McCullough and Willoughby's (2009) idea that religion can enforce discipline but can also affect the selection of goals and desires. We also contribute to Rounding et al.'s (2012) research. They demonstrated that exposure to religion offers willpower. We demonstrate that the willpower evoked by religion regulates impulsive buying tendencies. In addition, we add to their research that religion can also affect the desirability of a tempting product. Lastly, we contribute to literature on impulsive purchase behavior (Baumeister 2002; Hoch and Loewenstein 1991; Vohs and Faber 2007) by identifying religiosity as a potential causal determinant.

Throughout our studies we operationalized getting a massage at a spa as minor sinful behavior. Drinking wine was considered as major sinful behavior. A pretest did confirm that the former was less sinful than the latter, but generalizations should be made carefully. We ran our pretest through Amazon's Mechanical Turk and restricted our population to U.S. citizens. Earlier research on drinking habits yielded that the alcohol consumption of U.S. citizens is amongst the lowest in the developed world (Cohen 2008). It could be that consuming alcohol is considered more sinful amongst the U.S. population compared to other countries. Different perceptions of alcohol's sinfulness could be related to the vague definition of sinful behavior. Sinful behavior is all behavior that is in conflict with religions norms and values (Riley 2008). In real life, the definition of sinful behavior depends on people's own subjective interpretation and also on the word of opinion leaders. Consequently, there should be some variance on the individual level.

Another sample related issue is the overall religiousness of our research population. For study 2 and study 3 we gathered data through MTurk from U.S. citizens. A religious landscape survey conducted in 2008 by the Pew Research Center showed that, on average, 83% of the U.S. citizens were religiously affiliated. Religiosity in the U.S. is much higher

when for instance compared to Europe (with the exception of Poland) (Andersen, Gundelach, and Lüchau 2008). In study 2 and study 3 we primed the respondents with a scrambled sentence task that contained religious words. As our research population is quite religious, it could be that our respondents were more easily influenced by the religious words. This imposes an important limitation on the generalizability of our findings. We are not able to make any conclusions for other, less religious populations.

8.1 Future research directions

Our current findings offer insights in how religion and subjective well-being are interconnected with each other. Religiosity has both been associated with increases and decreases in subjective well-being (Ryan, Rigby, and King 1993). Religions can activate a concern with approval based pressures, which could cause inner twists. Inner twists may arise because of a conflict between intrinsic wants and feelings such as guilt or shame. These approval based pressures prevent people from doing what they actually want. The findings of study 2 exemplify this. Approval based pressures lowered participants' willingness to spend money on a desired product. A potential longer term consequence of such conflict could be a decrease in subjective well-being and mental health. Hence, part of religions' negative influence on well-being could be attributed to religion's restrictive influence on pleasurable consumption.

On the other hand, religion's positive effect on well-being could be related to religions' influence on the desirability of products. Religion helps individuals to select beneficiary goals and desires. For example, study 3 illustrates that exposure to religion can incite to intrinsically devaluate the consumption of alcohol. (Over)consumption of alcohol generally is linked to a decreased overall life quality (Poikolainen, Vartiainen, and Korhonen 1996). If religion indeed helps to prevent potentially harmful behavior, it could also have a positive impact (mental) health.

The idea that the (social) control originating from religion has more than one effect on subjective well-being can be traced back to the original sociological ideas as developed by Emile Durkheim. Durkheim (1912) extensively studied the social influences of religion on the individual. He observed that religion can offer a positive feeling of social integration, but it can also be experienced stressful and stringent. Ultimately, Durkheim even ascribed suicide rates to such feelings of stress or anomie. Overall, future research could address how religion

differently affects subjective well-being by imposing pressure to conform and/or by helping to select the proper goals in life.

Apart from the influence on mental health, religion could also trigger differential longer term consequences for impulsive consumption retraceable to the differences between self-regulation and self-control. Deliberatively adjusting behavior is rooted in an individual's self-control or willpower, which is generally viewed as finite. As willpower is exhaustible, consumers will eventually fail to control their urge and will occasionally engage in impulsive purchase behavior in the long run. Study 2 suggests that exposure to religious concepts incited to deliberately refrain from moderately sinful temptations. If the willpower to control (incipient) urges is depleted, it is thus very likely that consumers occasionally buy moderately sinful products. Exposure to religious concepts thus offers willpower to control urges, but the increase in willpower should be temporary as it is subject to exhaustion. This is different from volitional forms of behavioral regulation, which have more persistent and enduring outcomes. Our results further suggest that behavioral regulation for serious sinful product could be more enduring because religion volitionally prompts such products as less desirable (cf., study 3).

Future research should investigate the effects of religions' regulation on impulsive consumption and subjective well-being. We already speculated about their potential interconnectedness, but additional empirical support is needed. Such research could investigate religion's negative effect on subjective well-being by focusing on its role in the conflict between inner wants and approval based pressures. Empirical research is also needed to test religion's positive effect on subjective well-being by helping to select (mental) health enhancing goals and desires. Besides the focus on subjective well-being, empirical research could also test how enduring religion's effects are on impulsive consumption. Is it indeed possible to discriminate between the longer term effects of self-regulation and self-control?

9. CONCLUSION

The presence of religious concepts did affect impulsive purchase behavior. Moreover, religiosity could activate different forms of behavioral regulation contingent upon the moral classification of the tempting product. In particular, we showed that individuals may refrain from moderately sinful impulses because of a concern with approval based pressures. The participants did like the product, but feelings such as shame or guilt reduced their willingness to spend. We also showed that exposure to religiosity urged to disregard serious sinful

behavior because it ceased to be desirable. By highlighting the existence of two styles of behavioral regulation, we contribute to the research on impulsive purchase behavior and religiosity.

**CONCLUSIONS, CONTRIBUTIONS,
AND FUTURE RESEARCH**

CHAPTER V: CONCLUSIONS, CONTRIBUTIONS, AND FUTURE RESEARCH

Since the emergence of systematic research on hedonic consumption in the 1980's (Hirschman and Holbrook 1982) a great deal of interesting research has been done.

Despite the valuable insights of previous research, hedonic consumption still has some unresolved mysteries. In the introductory part, we argued that hedonic consumption is a complex phenomenon as it is sometimes hard to grasp in logical deductions. Buying hedonic products does not logically lead to the experience of pleasure. Pleasure is considered to be a side-product of consumption that emerges under the right conditions. The experience of pleasure is tied to the fulfillment of fantasies and desires. The realization of wishes and desires assumes the freedom to express them.

The first goal of this dissertation was to investigate how important freedom and autonomy could be for hedonic consumption. Across all three empirical papers we investigated the role of autonomy and freedom for (hedonic) consumption. The first paper showed that the experience of autonomy in a hedonic purchase situation is likely to affect the perceived longevity. The second paper demonstrated that autonomy is especially relevant for spendthrifts when making (hedonic) purchases. In the third paper, we showed that social norms and values may also affect freedom of action and put a burden on hedonic consumption.

The second goal was to test if all individuals respond similarly to having versus lacking autonomy in (hedonic) purchase situations. In the second paper, we found that tightwads as opposed to spendthrifts did not behave differently when having versus lacking autonomy. It appeared that spendthrifts believe that they are able to express their own wishes and desires in most situations. However, threats to personal control reduced their feelings of autonomy and also curtailed their spending behavior. When lacking autonomy, spendthrifts' spending behavior no longer differed from tightwads'.

The third goal was to investigate how social norms and values interrupt feelings of autonomy and therefore reduce the appeal of hedonic products. In a third paper we showed that exposure to religion can reduce consumer' willingness to spend on hedonic products either because a concern with approval based pressures or because the product loses some of its intrinsic desirability. In what follows, we will first briefly repeat the most important

findings. Afterwards, we will discuss the theoretical contributions, implications, and some ideas for further research.

1. RECAPITULATION OF THE MOST IMPORTANT FINDINGS

In the first paper we investigated how a hedonic versus utilitarian purchase motivation could alter the perceived longevity of a product. Traditional research argues that consumers try to construct information about unknown attributes by inferring it from external, observable, cues related to the marketing campaign (Kirmani and Rao 2000). In our first paper we tested if consumers also rely on internal cues (i.e., pain of paying) related to the purchase motivation to estimate the longevity of a product. First, we analyzed real market data on second hand cars. Building on the principles of mental accounting (Thaler 1985), we used the demand price of the cars as an indicator of a car's remaining life. We grouped the cars as hedonic or utilitarian and found that the latter devalue slower than the former. This suggests that utilitarian cars are expected to last longer. We hypothesized that a longer expected lifetime for utilitarian products could be explained by the pain of paying experienced at the moment of purchase. Utilitarian purchases are often obligatory acts in order to solve practical problems. We reasoned that this obligatory dimension reduces consumers' feelings of autonomy and therefore exacerbate pain of paying. We hypothesized that this causal mechanism could offer an explanation for utilitarian products' longer expected lifetime. In a second study, we found evidence for the entire explanatory mechanism. Utilitarian motivated shoppers experienced less autonomy, which exacerbated the pain of paying and increased the longevity estimates of a bike needed for commuting. In the other studies we focused on the separate steps of the causal mechanism. Study 3 showed that a reduction in autonomy increased pain of paying and therefore increased the estimated lifetime of a camera. Study 4 demonstrated that a more painful method of payment (cash instead of credit card) increased the perceived longevity of a jacket. Across three studies, we replicated that pain of paying urges consumers to believe that a product will last longer. Our causal chain analysis confirmed the existence of our hypothesized process.

In the second paper, we argued that spendthrifts exhibit a unique psychology. It appears that they act on the presumption of autonomy. We hypothesized that a reduction in feelings of autonomy by a threat to personal control could curb their willingness to spend. To test if threat to personal control moderates spendthrifts' spending behavior, we set up three studies.

Each study sketched a different situation in which the participants either did or did not experience personal control. In a first study the participants could either choose a training program or were assigned to one. The results of this study demonstrated our basic effect: spendthrifts' willingness to spend on a visit to the sauna dropped to similar levels as tightwads' when they were not able to control situational outcomes and to choose a training program. In a second study we manipulated threat to personal control by purchase context. Study 2 showed that spendthrifts experienced less feelings of autonomy when required to buy a functional bike and therefore were less willing to spend on bike accessories. In study 3 threats to personal control were manipulated by a service that was out of stock. When spendthrifts could not choose the massage of their preference because it was no longer available, they were less willing to spend money on the other services provided by the spa. Study 3 lends further support for our model by offering mediation evidence. Spendthrifts' lower willingness to spend was mediated by a drop in positive, energizing feelings that are inherent to the experience of autonomy.

In a third paper, we investigated how exposure to religion could interfere with the purchase of hedonically tempting products. Previous research has shown that religion steers behavior in two different ways (Ryan, Rigby, and King 1993). Religions either adjust behavior because of intrinsically compelling arguments or because of a fear of approval based pressures. In this paper we tested how these two different forms of behavioral regulation intervene with pleasurable consumption. In a first study we matched secondary data on religiosity and credit card indebtedness across the United States. Credit card debt has been used as a measure of impulsive purchase behavior (Wilcox, Block, and Eisenstein 2011). Analysis of this data yielded that the state level average credit card debt per borrower could be explained by the state level average religiosity. We replicated these findings in two experimental studies, with special attention for the underlying process. In study 2, we demonstrated that a religious prime (scrambled sentence task) urged the respondents to refrain from spending money on a hedonically framed massage. Getting a massage was pretested as moderately sinful. The lower willingness to spend was mediated by a concern with approval based pressures. In study 3, we showed that exposure to religion also urged to refrain from spending on major sinful products (alcohol), but for a different reason. In study 3, the lower willingness to spend on major sinful products was mediated by an intrinsic devaluation of the wine. Overall, we concluded that religion urges to refrain, but not dislike, moderately sinful behavior because of a concern with approval based pressures. Major sinful behavior is

despised after being exposed to religiosity because of an intrinsic devaluation of the product or service.

The research goals that we set forward in the introduction were independently treated in each chapter. In addition, some comprehensive insights are possible. We aimed to investigate how purchase motivations alter the perception of a product. Chapter 2 (“Pleasure for a moment, functionality for a lifetime: the impact of autonomy on product lifetime expectancies”) verified that purchase goals color a product’s perceived longevity. Chapter 2 further demonstrated that purchase goals affect the perception of the incurred costs. The incurred costs for the same product were perceived less (more) painful for when holding a hedonic (utilitarian) purchase goal. Furthermore, it appeared that the perception of autonomy was a crucial determinant for how the incurred costs were affectively interpreted. Interestingly, chapter 3 (“On becoming frugal: threat to personal control can make spendthrifts act like tightwads”) also highlights the importance of autonomy. In this chapter we again demonstrated that feelings of autonomy are related to a hedonic purchase motivation (cf., study 2), and even showed that such feelings are an important requirement for impulsive purchase behavior by spendthrifts (cf., study 1 and study 3). Furthermore, the fourth chapter also stresses the importance of autonomy for hedonic purchase. Religious norms and values can limit people’s sense of freedom as individuals may feel obligated to follow certain religious rules instead of doing what they want. Indeed, in the fourth chapter we showed that exposure to religiosity curtailed the consumption of hedonically tempting products. Overall, in our three papers we show that autonomy is important for hedonic consumption and is even intrinsically related to it. Lacking autonomy does not only cause more pain of paying, it also inhibits consumers to spend money. Hirschman and Holbrook (1982) argue that pleasure is a byproduct derived from consumption and is contingent upon the mental imageries created round a product. Our research adds that subjective autonomy and freedom are essential preconditions to be able to experience pleasure.

2. THEORETICAL IMPLICATIONS

Some important theoretical contributions emerged throughout this dissertation. Each paper yields important contributions, combining them offers a more comprehensive insight on hedonic versus utilitarian consumption. Our first paper (“Pleasure for a moment, functionality for a lifetime: the impact of autonomy on product lifetime expectancies”) contributes to three

streams of literature. First we contribute to the research on information asymmetry (Kirmani and Rao 2000). Everybody gets confronted with problems of information asymmetry and this occurs in a variety of settings. Up to now, research generally assumed that problems of information asymmetry are solved by inferring information from external signals. External signals exist in many forms and can be manipulated in different ways by marketing campaigns. We contribute to this field of research by showing that consumers do not only rely on external cues to construe information. We show that purchase motivations can activate certain affective reactions that may serve as an internal cue that colors the perception and attribute level information of a product. Instead of only relying on external cues, consumers also rely on internal cues related to the purchase motivation to construct product related information.

Second, this paper contributes to research on hedonic versus utilitarian purchase goals. Prior research argues that hedonic consumption is transient and frivolous because people more easily adapt to pleasurable things (i.e., hedonic treadmill effect: Frederick and Loewenstein 1999; Wang, Novemsky, and Dhar 2009) and because hedonic consumption is more susceptible to fashion trends (Grewal, Mehta, and Kardes 2004). We offer an alternative explanation for these previous findings by linking the estimated longevity of a product with (the absence of) autonomy and the resulting (negative) affective reactions that arise during a purchase.

Thirdly, we contribute to research on the pain of paying. Earlier research showed that pain of paying differs with method of payment (Raghubir and Srivastava 2008; Raghubir and Srivastava 2009) and framing of the cost (Rick, Cryder, and Loewenstein 2008). Our results suggest that freedom or autonomy associated with method of payment could serve as an alternative explanation for these earlier documented effects. For example, credit cards decouple the transfer of money from payment (Raghubir and Srivastava 2008) but could also offer more freedom and autonomy which may reduce the pain associated with payments.

The findings of the second chapter (“On becoming frugal: threat to personal control can make spendthrifts act like tightwads”) lend to important contributions for three different streams of literature. First, we contribute to literature on individual differences in spending behavior by introducing threat to personal control as a new moderator. When spendthrifts experience a threat to personal control, their spending drops and they paradoxically become tightwads. Secondly, earlier research mainly focused on how tightwads could be encouraged to spend by reducing the pain of paying (Rick, Cryder, and Loewenstein 2008; Raghubir and Srivastava 2008; Raghubir and Srivastava 2009). We show the mirror pattern. Spending

differences between tightwads and spendthrifts could also disappear by the latter spending less instead of the former spending more. Thirdly, we contribute to the research on autonomy (Leotti, Iyengar, and Ochsner 2010; Mineka and Hendersen 1985; Ryan and Deci 2006; Shapiro, Schwartz, and Astin 1996). Earlier research showed the positive consequences of autonomy. We acknowledge these findings, but nuance the overall positive impact of autonomy. Spendthrifts like autonomy, but it triggers them to (over)spend which is not always a good thing.

The paper “How God determines what we buy” investigated how religious’ norms and values intervene with pleasurable consumption. Prior research documented a negative correlation between general measures of religiosity and impulsive behavior (e.g., Benda and Corwyn 1997; Gorsuch 1995; Lee 2002; Meier 2003) but did never establish a causal link. We contribute to these earlier findings that exposure to religion can urge to refrain from impulsive spending behavior for two different reasons. First, religiosity hampers the consumption of moderately sinful behavior because of a concern with approval based pressures. Second, exposure to religiosity could also obstruct the consumption of major sinful products due to an intrinsic devaluation of the tempting product. We are the first to establish a causal link between religiosity and impulsive purchase behavior. Consequently, we contribute to research on religiosity (Friese and Wänke 2014; McCollough 2010; Rounding et al. 2012; Ryan, Rigby, and King 1993) and impulsive purchase behavior (Vohs and Faber 2007; Baumeister 2002; Haws, Bearden, and Nenkov 2011).

When taking all findings together, the current research yields several contributions to the field of hedonic consumption. Across the different papers, it becomes clear how important feelings of autonomy are for hedonic consumption. Botti and McGill (2011) already demonstrated that hedonic (but not utilitarian) activities are evaluated better when consumers are able choose the activity themselves instead of it being externally determined. We further stress the importance of autonomy for hedonic consumption by showing that it may be a pre-condition to have pleasure. When autonomy is hampered, either by threats to personal control or social norms and values, hedonic consumption becomes less attractive. We also showed that a lack of autonomy may even activate compensatory thinking in order to cope with this negative situation (e.g., prolonged longevity for products bought under a lack of control). Autonomy and freedom appears to be intrinsically related to hedonic consumption. Yet when making this conclusion, one must bear in mind that too much freedom (of choice) has earlier been associated with negative consequences. Freedom of choice enables variety seeking behavior (Ratner, Kahn, and Kahneman 1999), offers choice flexibility and allows consumers

to match their preferences (Chernev 2003). Nevertheless, too much freedom of choice can be frustrating due to a (cognitive) overload which leads to dissatisfaction (Schwartz 2004) and even deferral of choice (Iyengar and Lepper 2000). Consequently, the adagio “everything in moderation” seems to apply. Freedom of choice and autonomy are important under the right conditions, for the proper individuals.

3. PRACTICAL IMPLICATIONS

In addition to our theoretical implications, the current results also lend to some downstream practical implications. Firstly, the results of the first paper offer important insights for the sale of extended service contracts and insurances. Extended service contracts (ESC's) are additional warranties that ensure a working product for a given period of time. As such, ESC's are sold as a practical, instrumental product. Rationally speaking, the purchase of ESC's should reflect a cost versus benefit comparisons. Nevertheless, the high profitability of ESC's suggests that they are often useless from a rational point of view (Week 2005). Our results showed that affective reactions (i.e., pain of paying) may also be determinative for the purchase of ESC's. As the pain of paying influences the estimated longevity of a product, consumers might think that it is no longer needed to buy ESC's. Despite its functional character, our results would also predict that consumers are more likely to purchase ESC's for hedonic instead of utilitarian products. Utilitarian products cause more pain of paying, which increases longevity estimates. Interestingly, such predictions are in line with previous research documenting a higher willingness to purchase ESC's for hedonic products (Chen, Kalra, and Sun 2009).

Our second paper lends practical guidance for compulsive spenders and sellers. Spendthrifts are mostly immune for the pain of paying. Very often, they spend more than they actually have. Our results showed that spendthrifts especially spend money when they experience feelings of autonomy. These findings are important for both sellers and spendthrifts. First, if sellers want to increase their sales, it is clear that they should offer more autonomy and freedom to their customers. They could do this easily by increasing the size of their assortment and offering freedom of choice. Second, a more socially correct advice for spendthrifts is also possible. As autonomy triggers spending behavior, spendthrifts should avoid situations and places that offer autonomy and freedom of spending. If spendthrifts'

spending behavior is really problematic, the ultimate advice would be to externally limit their freedom of action.

The third paper suggests that practitioners and marketers should also consider the overall religiosity of a targeted population when promoting pleasurable products. It appeared that people were less willing to buy pleasurable products when religiousness was salient. Interestingly, we showed that stressing the functional attributes of a hedonic product did not lower the willingness to buy upon exposure to religiosity. One practical advice could thus be to rely on such a strategy, i.e., stressing the functional value of a hedonic product, when promoting hedonic products in a religious population.

In fact, the hedonic versus utilitarian framing of a product showed to be important in all the papers of this dissertation. In all three papers we manipulated the hedonic versus utilitarian distinction by changing the motivation and framing of the same product. In the introduction, we argued that products have the potential to activate mental imageries. In several of our studies we demonstrated that these mental imageries are important to understand how a product is perceived and to comprehend purchase intentions. This is also important for practitioners. Practitioners should be aware of what the consequences are of certain product framings. When a product is framed as hedonic or utilitarian it might activate a whole range of different assumptions related to that framing. From a social-psychological view, the framing of a product could activate schemas. A schema is a cognitive framework that facilitates the processing of information (DiMaggio 1997). Such cognitive shortcuts ease the interpretation of information, but also activate some expectations. Marketers should be aware of the activated expectations and should try to meet them. For instance, when a product is framed as utilitarian consumers may expect that it is going to last for a significant period of time. Likewise, when products are framed as hedonic consumers may anticipate a purchase context characterized by freedom and autonomy (e.g., larger assortments).

4. LIMITATIONS AND FUTURE RESEARCH

In our first paper, we consistently found that pain of paying increases the expected longevity of a product. However, the relation between purchase motivation and pain of paying may be less univocal. We reasoned that hedonic purchases reflect people's wishes and desires. Spending money on desires should not be painful as it enables to reach intrinsically valued goals. The idea that hedonic consumption reflects intrinsically valued desires is also

reflected in our manipulations. However, this simplification could be more complex in real life. In real life, spending money on hedonic products is sometimes problematic. Most people do not have unlimited amount of resources to spend. When having a limited amount of resources to spend, spending money on pleasurable things could imply the forsaking or postponement of other, more essential products. Such conflicts usually evoke a sense of guiltiness when choosing for the hedonic option.

It is not farfetched that feeling guilty about a purchase also evokes pain of paying (cf., Rick, Cryder, and Loewenstein 2008). In our research, we manipulated a guilt-free hedonic purchase motivation. In our scenarios, purchasing the hedonic product did not imply the forestallment of any other product. As we did not manipulate guilt, our conclusions are only valid in a guilt-free context. Future research should tackle this issue by further investigating how longevity estimates are related to pain of paying and the experience of guilt.

We investigated the importance of autonomy for spendthrifts. Previous research showed that feelings of autonomy improve mental health (Ryan and Deci 2001; Leotti, Iyengar, and Ochsner 2010). Our results seem to nuance these earlier findings by suggesting that autonomy is not necessarily a good thing for spendthrifts. Feelings of autonomy trigger spendthrifts to spend money, and it is very likely that several worries result from overspending. Worries reduce subjective well-being. Autonomy could thus hamper spendthrifts' mental health instead of improving it. Unfortunately, we do not possess any empirical material that is able to support such conclusions. Still, previous research raised a similar issue (Rick et al. 2008) by arguing a curvilinear relationship between individual scores on the spendthrift-scale and subjective well-being. Rick et al. (2008) reasoned that spendthrifts' psychological health should be poor because they spend more than they actually want. Tightwads' psychological health should also be poor, because these people generally spend less than they actually want. No research has empirically investigated this issue, leaving a fertile field of research open. Future research should thus try to understand tightwads' and spendthrifts' subjective well-being. In addition, future research should also investigate how spendthrifts deal with a decreased mental health. According to us, it seems reasonable that spendthrifts will try to elevate their happiness by spending even more. Such response would eventually lock them in a vicious circle of (over)spending: spending elicits worries, and these worries trigger more spending.

In our second paper we studied how threats to personal control affect autonomy and therefore determine spending behavior. Future research could try to replicate these results by approaching autonomy and freedom from another perspective. Our third paper already

showed that social norms and values could alternatively limit freedom of action and the willingness to spend money. Consequently, it is likely that autonomy-reducing norms and values also moderate spendthrifts' spending behavior. In addition, future research could approach freedom and autonomy from an assortment size perspective. The freedom of choice (or the lack of it) that is associated with large versus small assortments could moderate spendthrifts' spending tendencies. It seems reasonable that spendthrifts will spend more when they can choose from larger assortments because large assortments offer freedom of choice (Chernev 2003). However, unlike other situational feelings of autonomy, consumers can experience too much choice in a large assortment. The experience of too much choice hinders spending behavior (Iyengar and Lepper 2000; Schwartz 2004). It would be interesting to investigate how spendthrifts versus tightwads behave in such contexts. Can an assortment ever be too large for spendthrifts? Do they also experience choice overload? Maybe, spendthrifts only experience choice overload for utilitarian products? Answering these questions is an important step in order to understand spendthrifts' spending psychology and should therefore be addressed in future research.

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