

Lades, Leonhard K.

Working Paper

Impulsive consumption and reflexive thought: Nudging ethical consumer behavior

Papers on Economics and Evolution, No. 1203

Provided in Cooperation with:

Max Planck Institute of Economics

Suggested Citation: Lades, Leonhard K. (2012) : Impulsive consumption and reflexive thought: Nudging ethical consumer behavior, Papers on Economics and Evolution, No. 1203, Max Planck Institute of Economics, Jena

This Version is available at:

<https://hdl.handle.net/10419/57569>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

PAPERS on Economics & Evolution



MAX-PLANCK-GESELLSCHAFT

1203

Impulsive Consumption and Reflexive Thought: Nudging Ethical Consumer Behavior

by

Leonhard K. Lades

The *Papers on Economics and Evolution* are edited by the Evolutionary Economics Group, MPI Jena. For editorial correspondence, please contact: evopapers@econ.mpg.de

ISSN 1430-4716

© by the author

Max Planck Institute of Economics
Evolutionary Economics Group
Kahlaische Str. 10
07745 Jena, Germany
Fax: ++49-3641-686868

Impulsive Consumption and Reflexive Thought: Nudging Ethical Consumer Behavior*

Leonhard K. Lades[‡]

Abstract

The paper deals with impulsive consumption and highlights the roles that cognitive and motivational aspects of reflexive thought (namely self-control and self-image motives, respectively) play in intertemporal decisions. While self-control inhibits individuals from consuming impulsively, self-image motives can induce impulsive consumption. Based on recent neuroscientific findings about ‘wanting’–‘liking’ dissociations, the paper presents a potential motivational mechanism underlying such impulsive consumption decisions. Utilizing the knowledge of this mechanism and acknowledging both cognitive and motivational aspects of reflexive thought, the paper expands on three libertarian paternalistic means to foster an ethical way of impulsive consumption: strengthening willpower, reducing impulsive desires to consume, and guiding impulsive behavior in ethical directions by making salient certain self-images that favor ethical consumption.

Keywords: Impulsive Consumption; ‘Wanting’ versus ‘Liking’; Ethical Consumption; Libertarian Paternalism

JEL classification: B; B52; D03; D91; K2; Q3

*I thank the Federal Programme “ProExzellenz” of the Free State of Thuringia for financial support. I am grateful to Chad Baum, Martin Binder, Christian Schubert, and Ulrich Witt for valuable comments. All errors are mine.

[‡] Max Planck Institute of Economics, Kahlaische Str. 10, 07745 Jena, Germany. Email: lades@econ.mpg.de.

1 Introduction

In their well-known cafeteria example, Thaler and Sunstein (2008) argue that individuals can be nudged to choose products that make them better off, as judged by themselves. The authors draw on findings suggesting that the way products are displayed and arranged matters. Products that are noticed first tend to be purchased more often than products in less favorable locations, given that individuals tend to grab the first products they see. The authors suggest putting healthy fruits in the best locations and unhealthy junk food in less favorable places in order to nudge individuals towards healthy eating. Such slight changes in the choice architecture are argued to not be paternalistic as commonly defined, since nudges do not reduce the individual's freedom of choice. What Thaler and Sunstein (2008) do not explain in their cafeteria example is why individuals tend to grab the first products they see. One possibility, actually the one which is presumed in this paper, is that individuals choose the first products they see in an impulsive fashion.

Impulsive consumption is defined as the result of sudden and powerful urges that induce consumers to buy immediately without a lot of reflection about the long-term consequences of the purchases (Rook, 1987). While the urges that induce impulsive consumption are motivational aspects, the reflection about long-term consequences that tends to reduce impulsive consumption is cognitive in nature. In this dichotomy of motivation and cognition, recent behavioral economic research on impulsive consumption focuses on the mitigating effects of the latter. Accordingly, practical implications following from this research mostly aim at strengthening the cognitive factors that can reduce impulsive consumption by suggesting, for example, external commitment devices (Bryan et al., 2010). This paper, on the contrary, expands on the motivational aspects of impulsive consumption. In particular, the paper presents a mechanism, called cue-triggered 'wanting', as one potential explanation for how and why urges to consume occur. Utilizing the knowledge of this mechanism, the paper suggest additional ways to influence impulsive consumption.

To highlight the differences between cognitive aspects and motivational aspects of impulsive consumption the paper investigates the roles played by the uniquely human capacity for reflexive thought. Reflexive thought, or self-awareness, describes the ability to think reflexively about oneself. Cognitive aspects of reflexive thought include the abilities for self-control (Baumeister, 2002) and mental time-traveling (Hershfield, 2011). These cognitive aspects help the individuals to resist urges that would otherwise lead to impulsive behavior. Motivational aspects of reflexive thought, on the contrary, can induce urges to consume impulsively. These motivational aspects are identity-related needs commonly called self-image motives (Dunning, 2007). When, for example, individuals perceive discrepancies between their actual self-images and their ideal self-images, they sometimes impulsively purchase goods that promise to reduce these self-image discrepancies (Dittmar and Bond, 2010). The paper argues that such impulsive purchases of identity-relevant goods can be explained by the cue-triggered 'wanting' mechanism.

Utilizing the knowledge about both the cue-triggered ‘wanting’ mechanism and the different aspects of reflexive thought, the paper presents implications for libertarian paternalistic interventions. On the one hand, the paper argues that self-nudges should be preferred to nudges by third parties, because the subjective character of self-images makes it difficult for third parties to judge what makes individuals better off. If anybody knows which self-image is predominantly salient in an individual, it is the individual herself. On the other hand, by highlighting the motivational aspects of impulsive consumption and reflexive thought, some new nudging strategies emerge. These are presented in the context of ethical consumption. The paper illustrates how nudges can be used to both reduce unnecessary impulsive consumption, and increase the frequency with which ethical products are impulsively consumed. Essentially, three strategies through which choice architects (third parties, but preferably the individuals themselves) can nudge individuals toward an ethical way of impulsive consumption will be distinguished. First, individual willpower to guard against unethical impulsive consumption can be strengthened. Second, the desires for unethical impulsive consumption can be reduced. Third, impulsive consumption can be guided to ethical directions by making salient certain self-images that favor ethical consumption.

The rest of the paper is organized as follows. In section 2, I briefly present some basic facts about impulsive consumption. Section 3 summarizes behavioral economic models of impulsivity, underscoring the roles that two human decision making systems, called System 1 and System 2, play in intertemporal decisions. Special emphasis is devoted to how self-control occurring in the cognitive System 2 affects impulsive decisions. Based on an evolutionary perspective on economic behavior, section 4 presents motivational aspects of impulsive consumption. This section shows how self-image motives can induce impulsive consumption in the automatic System 1 using the cue-triggered ‘wanting’ mechanism. Section 5 offers a note of caution for those libertarian paternalistic policies that are applied by third parties to populations composed of diverse self-images. Section 6 presents three strategies by which choice architects (either third parties or the individuals themselves) can nudge the automatic System 1 to make impulsive consumption more ethical. The last section concludes with some normative implications.

2 Impulsive Consumption

There are various types of impulsive consumption, including reminder impulsive consumption, suggestion impulsive consumption, planned impulsive consumption, and pure impulsive consumption (Stern, 1962). This paper deals solely with the final type. Pure impulsive consumption results from sudden and powerful urges that induce consumers to buy immediately. These urges tend to occur spontaneously and without a lot of reflection about the long-term consequences of the purchase (Beatty and Ferrell, 1998; Rook, 1987). Rather than an active act, impulsive consumption is an immediate and automatic reaction to per-

ceived stimuli (Kroeber-Riel et al., 1992). The urge-like character of impulsive buying is also what distinguishes impulsivity from impatience. The latter, in contrast to impulsivity, does not need to be spontaneous, can involve reflection, and is not necessarily induced by urges. Recent technological innovations such as the cash machine, home-shopping television programs, and the Internet facilitate quick and effortless consumption, so that today the opportunities to buy impulsively occur more often than ever before (Strack et al., 2006; Vohs and Faber, 2007). Additionally, dramatic increases in individual disposable incomes and credit facilities have supported the rise of impulsive consumption (Dittmar and Drury, 2000). Some consumption products are bought impulsively more often than others (Dittmar and Drury, 2000; Estle et al., 2007). While it is rather common that individuals buy, for example, food and clothes on impulse, other consumption objects such as basic body care items are almost never bought impulsively (Dittmar and Bond, 2010). Although impulsive consumption is not seen as solely negative (Hausman, 2000), it is often associated with negative consequences such as financial problems, lower self-esteem, post-purchase dissatisfaction (Rook, 1987), as well as the high levels of consumer debt (Vohs and Faber, 2007). The detrimental consequences of impulsive consumption have prompted many calls for policy intervention. One type of intervention that does not rely on coercion is to change the choice architecture of tempting situations and to nudge individuals to change their impulsive behavior. Interventions not relying on coercion preserve the individuals' freedom of choice, though are also more difficult to implement. Therefore, in order to realize such an intervention, knowledge about the processes underlying impulsive choices is needed.

3 The Behavioral Economic Perspective: Two Systems

Recently, several behavioral economic theories explaining why individuals consume impulsively have been offered. In these explanations, impulsive behavior is seen as the outcome of a struggle between two opposing forces, namely desire and willpower (Hoch and Loewenstein, 1991). This conception corresponds to recent behavioral economic research that envisions human behavior as driven by two different decision making systems (e.g. Kahneman, 2011). The first system, sometimes called System 1, roughly corresponds to intuitive decision making. It is quick, efficient, present-oriented, related to desire and emotion, and often relies on unconscious processes. The second system, called System 2, reflects what is usually meant by the word thinking. System 2 is slow, rule-based, controlled, and comprises the abilities of willpower and cognition. Other notations for the two systems include, respectively, desire and willpower (Hoch and Loewenstein, 1991), the hot system and the cold system (Metcalf and Mischel, 1999), and impulsive and reflective mechanisms (Strack et al., 2006). Whereas System 1 is assumed to exist in both animals and humans, System 2 is unique to humans (at least in its disproportionately large size). Behavioral economics in general acknowledges that many economic decisions are guided

by intuitions occurring in System 1. Kahneman (2011), for example, refers to System 1 as the hero of his book summarizing his work in behavioral economics. The intuitions in System 1 are sometimes biased and thus can explain why behavior diverges from rational benchmarks. Also urges to consume for example junk food occur in System 1 and lead to impulsive behavior when System 2 is not able to control System 1 in line with the plan of eating healthy.

In behavioral economic studies of intertemporal choice, one common formalization of the intrapersonal conflict between the two systems is Laibson's (1997) β - δ model. This model suggests that an individual's intertemporal decisions can be described by a quasi-hyperbolic discount function with discount factors varying discretely over time ($D(k) = 1, \beta\delta, \beta\delta^2, \beta\delta^3, \dots$). This function implies that individuals have two separate discount factors corresponding to System 1 and System 2, respectively. Whereas δ corresponds to System 2 and discounts all future rewards with a constant rate per period, System 1, reflected by the β parameter, makes a sharp distinction between immediate rewards and future rewards: when an immediate reward is contained within the choice set, the reward in the next period is discounted by $\beta\delta$, but when both rewards occur in two successive periods in the future, the later reward is discounted only by δ (Laibson, 1997). The resulting quasi-hyperbolic discount function is supported by neuroeconomic studies (McClure et al., 2007, 2004).¹ These neuroeconomic studies suggest that an active dopaminergic midbrain system is associated with the β parameter (System 1), while the activation of the prefrontal cortex is associated with the δ parameter (System 2). The quasi-hyperbolic discounting model was successfully applied to various domains. Its success, as well as the neuroscientific support, suggests that intertemporal choices are indeed driven by the interaction of two distinct decision making systems, and that the respective brain areas indeed correspond to the two systems. However, acknowledging that the two systems correspond to distinctive brain areas does not yet explain how the two systems function. By using the quasi-hyperbolic discounting model, one can describe but not explain impulsive consumption. In order to provide such an explanation, more insights are needed to understand what mechanisms correspond to β and δ , or System 1 and System 2, respectively. That is to say, to understand impulsivity more thoroughly the factors that strengthen or weaken each of the two systems need to be elaborated upon (Camerer et al., 2005; Hoch and Loewenstein, 1991).

In intertemporal decisions, the major role of System 2 is to set long-term goals and make sure that these goals are achieved. Of great importance in this endeavor is the control of the myopic System 1. To control System 1, individuals need willpower. Willpower is seen as similar to a resource that can get depleted (Baumeister, 2002; Baumeister and Tierney, 2011; Vohs and Faber, 2007). When willpower is depleted by prior exercise, individuals tend to engage in impulsive buying behavior more frequently. This depletion of willpower

¹Though there are also neuroimaging studies that support a unitary system (e.g. Kable and Glimcher, 2007).

is not restricted to the domain in which the individuals have previously exerted self-control. Rather, when individuals exert self-control in one domain, the ability to delay gratification in other domains is also reduced. Self-regulatory fatigue or ego-depletion is one of the most frequently investigated subjects in social science (Baumeister and Tierney, 2011, p.2). With increasing frequency, explanations based on willpower and its depletion are also used by behavioral economists to understand self-control problems (Bucciol et al., 2011; Burger et al., 2011; Houser et al., 2008). Bucciol et al. (2011), for example, find that exposure to temptation depletes willpower and reduces economic productivity of young children. For the motivation to exert willpower, the individual capacity for reflexive thought is crucial. Due to this capacity, individuals can engage in mental time traveling (Hershfield, 2011), and, therefore, appreciate the positive and negative effects that current consumption has for themselves in the future. When individuals expect their future selves to be similar to present selves, using willpower and delaying gratification is much easier for them (Bartels and Urminsky, 2011; Hershfield, 2011). Hence, it can be argued that reflexive thought and mental time traveling is essential for the exertion of self-control. Supporting this point, Baumeister and Tierney (2011) argue that “willpower without self-awareness is as useless as a cannon commanded by a blind man” (p.114).

Research that focuses on the role that System 2 plays in intertemporal choices is helpful in understanding why individuals are, in general, more impulsive when they lack willpower. This has been greatly beneficial by suggesting ways individuals can increase their willpower and thereby reduce the influence of impulsive urges on their behavior (see section 6). However, presumably due to this focus on willpower, behavioral economics has so far failed to offer explanations for other aspects of intertemporal choice. For example, an explanation for the domain effect has not been given so far. That is, it is difficult to explain why only certain goods, such as junk food, sweets, tobacco, alcohol, fashionable clothing, watches, and some cars, tend to be bought impulsively when individuals lack willpower. (Dittmar and Bond, 2010; Dittmar and Drury, 2000; Estle et al., 2007; Frederick et al., 2002; Loewenstein, 1996). More generally, the focus on factors that influence the top down control from System 2 over System 1 lacks a motivational perspective that could address motivational questions regarding what goods are consumed impulsively (Heatherton and Wagner, 2011). Such a perspective switches the focus to the role played by System 1 in impulsive decisions.

System 1’s role in intertemporal choices has gained less attention than that of System 2. Commonly, it is assumed that System 1 is myopic and strives for immediate gratification. However, reasons are rarely given as to why this is the case. Sometimes, the striving for immediate gratification is related to the desire to behave in a hedonically pleasing manner (Rook, 1987; Shiv and Fedorikhin, 1999). Along these lines, it is assumed that only products that are hedonically pleasing can induce urges to consume impulsively. For example, impulsive choices of hedonically appealing (but unhealthy) cakes over healthy salads as in Shiv and Fedorikhin (1999) are explained by the hedonic character of the

cakes. That a product is hedonically appealing, however, is not sufficient to explain why strong visceral urges to consume occur and make System 1 myopic. Many products are hedonically appealing, but do not induce such urges to consume impulsively. Moreover, it is not obvious what makes a product hedonically appealing. What is needed is a mechanism that explains why System 1 becomes myopic from time to time.

One potential mechanism underlying impulsive consumption has been suggested by Hoch and Loewenstein (1991). They argue that, a few moments before the actual consumption act, individuals regard the soon-to-be-purchased products as belonging to them. Hence, the individual reference points shift from not mine to mine. When the individuals nevertheless refrain from the purchase, they feel as though they have lost the product. Together with the tendency to put more weight on losses than on gains (Kahneman and Tversky, 1979), reference point shifts offer a potential explanation for urges that sometimes lead to impulsive consumption. However, reference point shifts cannot explain why impulsive consumption occurs only selectively in some consumption domains, given that there is no reason to assume that the degree of loss aversion differs across product domains. Nevertheless, the framework has been beneficial, for example, in making sense of the fact that sudden increases in physical or sensory proximity induce impulsivity (Metcalfe and Mischel, 1999).

In later papers, Loewenstein elaborates on the tendency of System 1 to become myopic, suggesting that visceral influences can induce impulsive behavior (Loewenstein, 1996, 2000). He argues that the sensory proximity of rewards, together with the activation of visceral influences, cause individuals to act more impulsively. Visceral influences include affective states such as sexual arousal (Ariely and Loewenstein, 2006) and drug addiction (Giordano et al., 2002). For example, currently craving drug addicts show a greater degree of impulsivity than non-addicted participants. Moreover, the activation of drive states such as hunger and thirst, i.e. homeostatic dysregulations (Strack et al., 2006), as well as some negative emotions such as exhaustion, pain, and fear for physical safety belong to the visceral influences. Visceral influences put the individuals in hot states and thus produce short-sighted impulsive behavior. Due to hot-cold empathy gaps, such short-sighted behavior is not anticipated (Loewenstein, 1996). Visceral influences mainly influence the intuitive decision making in System 1 and sometimes overwhelm the rational forward-looking goals set in System 2 during cold states. The theory of visceral influences has led to significant progress in understanding how impulsive behavior occurs and what its determinants are. Also it has been adopted in dual process models in economics (e.g. Bernheim and Rangel, 2004). Although the theory of visceral influences has so far been unable to provide an answer to every question related to impulsive consumption (for example, it has not yet offered a general explanation for why some products tend to be bought impulsively quite often whereas other products are almost never bought on impulse), strengthening the focus on System 1 seems to be a good strategy to obtain more insights about what drives impulsive consumption.

4 Motivational Foundations from an Evolutionary Perspective

Recent approaches within behavioral economics have begun to ask for the motivations underlying economic behavior. Kahneman et al. (1997) understands economic behavior as being driven by hedonistic, utilitarian motives, i.e. by the enjoyment of pleasure and the avoidance of pain. However, by taking an evolutionary perspective on economic behavior, one can go beyond this conception of sensory utilitarianism (Witt, 2001, 2010). Witt suggests that pleasure and pain can be understood in terms of changing need deprivation states, where pleasure is attributable to reductions of need-deprivation states, and pain relates to increases in these states. As most needs are motivational dispositions inherited through evolution, a finite set of universal human needs can be defined. As a result, insights from biology and motivational psychology can be utilized to inquire more deeply into individual preferences to understand what it is that induces pleasure or reduces pain and thus motivates behavior.

Needs can be cognitive or intuitive in nature. Accordingly, consumer behavior can be motivated cognitively (i.e. within System 2) or automatically (i.e. within System 1). Witt (2001) further subdivides those needs that occur automatically into basic needs and acquired wants. These two motivational instances correspond to finite subsets of primary reinforcers and to secondary reinforcers in behavioral approaches, respectively. Using this classification, the effects of innate motivational dispositions are most obvious when basic needs are considered. In our life course we acquire new wants and develop cognitive motives that show a great deal of variation making it difficult to analyze preferences of whole populations. Although the means by which we learn new wants and cognitive motives are also the result of biological evolution, so that some similarities are likely to emerge across individuals, it is still difficult to predict their content. Therefore, the strength of an evolutionary perspective on economic behavior lies in the analysis of those motives or preferences that are related to primary reinforcers closely corresponding to the automatic System 1. As System 1 is where urges to consume arise, an evolutionary perspective should be particularly valuable for an analysis of the motivational foundations of impulsive consumption.

In the following, recent biopsychological findings that stress the importance of basic need deprivation states are presented. These findings suggest that need deprivation states can induce impulsive behavior by a motivational mechanism called cue-triggered ‘wanting’. Essentially, the cue-triggered “wanting” mechanism can be seen as a specific means by which visceral influences induce impulsive behavior (Berridge, 2002). The cue-triggered ‘wanting’ mechanism is based on the dissociation between ‘wanting’ (the core process of motivation) and ‘liking’ (the core process of hedonic reward).² Although most of the time individuals consciously want what they like and like what they want, in some specific situations the unconscious core processes of ‘wanting’ and ‘liking’ diverge (Berridge, 1999).

²In Lades (2011), the cue-triggered ‘wanting’ mechanism is described in some more detail.

Cue-triggered ‘wanting’ may have evolved early in our evolutionary past for reasons related to adaptive fitness (Berridge, 2009). However, as modern environments vary dramatically from ancestral conditions, these reasons may have vanished. The high degree of impulsive consumption we face today may be a result of this “mismatch” between human ancestral conditions and modern conditions (Burnham and Hare, 2007).³

The cue-triggered ‘wanting’ mechanism suggests that certain cues can lead to motivational ‘wanting’ peaks without changing ‘liking’ (Berridge, 2002; Berridge and Aldridge, 2008). Hence, these increased degrees of motivation induce impulsive decisions that are characterized by gaps in ‘wanting’ and ‘liking’. Cue-triggered ‘wanting’ can occur when individuals perceive stimuli or cues that were previously associated with immediately available consumption goods. However, these cues can increase ‘wanting’ to consume only when individuals are currently deprived in a strong physiological or psychological need that corresponds to an activation in the brain’s mesolimbic dopamine system. Moreover, the cues trigger ‘wanting’ to consume only when individuals explicitly or implicitly know that the cued consumption goods are able to satiate the currently deprived need. Accordingly, when individuals (a) are in a state of mesolimbic activation, (b) perceive cues that are associated with immediately available consumption goods, and (c) know that these consumption goods can satiate the currently deprived needs, the cues can trigger impulsive ‘wanting’ to consume. When these three factors coincide, the mesolimbic dopamine system attributes incentive salience to the cued rewards (Berridge, 2002; Berridge and Aldridge, 2008). The motivational strength of these cues, therefore, crucially depends on the degree of dopamine activation, so that stronger deprivation corresponds to a higher possibility of impulsive consumption. For example, when an individual is very hungry, the sight of a pizza-delivery car can trigger a strong and immediate urge to ‘want’ pizza, although the sight of the car does not change how much the pizza is ‘liked’ or expected to be liked. As a result, individuals can sometimes impulsively ‘want’ to consume goods, for example pizza, although they do not expect to like these goods; this is a behavior called irrational ‘wanting’ (Berridge, 2002).⁴ Hence, cue-triggered ‘wanting’ occurs when individuals are deprived of a specific need and additionally perceive a cue that is associated with an immediately available consumption good known to satisfy the deprived need. When not effectively self-regulated by willpower, cue-triggered ‘wanting’ translates into

³The dissociation between ‘wanting’ and ‘liking’ has already been recognized in behavioral economics. Applications of the ‘wanting’–‘liking’ dissociation include the explanations of addiction (Bernheim and Rangel, 2004), impulsive preferences for faces (Dai et al., 2010), the effects of failures (Litt et al., 2010), and implications for paternalistic interventions in addiction and credit card spending (Camerer, 2006). Also the utility terminology by Kahneman et al. (1997) is closely related, because experienced utility and decision utility refer to ‘liking’ and ‘wanting’, respectively (e.g. Berridge, 2002; Berridge and Aldridge, 2008; Kahneman et al., 1997). In Gilbert and Wilson’s (2000) miswanting, ‘wanting’–‘liking’ dissociations emerge from prediction errors, while the mechanism presented here describes ‘wanting’–‘liking’ dissociations at the same point in time.

⁴Besides changing incentive salience motivation, need deprivation states can also alter the hedonic aspects of reward. Individuals evaluate, for example, a pizza as tasting better when they are hungry than when they are satiated. However, such changes in enjoyment do not lead to impulsive consumption that is characterized by sudden and powerful urges.

impulsive consumption.⁵

As Berridge (2002) notes, cue-triggered ‘wanting’ is mostly consistent with, and supportive of, Loewenstein’s (1996) theory of visceral influences (see Section 3). The mechanism provides one possible explanation for how and under which circumstances visceral influences can lead to impulsive desires. Compared to the theory of visceral influences, however, the explanation based on cue-triggered ‘wanting’ has at least one major strength. With the cue-triggered ‘wanting’ mechanism, it can be explained why only some goods, and not others, tend to be bought impulsively. That is, cue-triggered ‘wanting’ offers an explanation for the domain effect in intertemporal choice. Only those consumption goods closely related to strong and salient need deprivation states that activate the brain’s mesolimbic dopamine system are appropriate objects for cue-triggered ‘wanting’. Deprivation states previously shown to induce cue-triggered ‘wanting’ include the sexual drive (Dai et al., 2010), the need to eat (Berridge et al., 2010), and the craving for drugs (Robinson and Berridge, 1993, 2008). All of these need deprivation states correspond to activation in the mesolimbic dopamine system. However, in addition to these physiological drive states, psychological need deprivation states can also activate the mesolimbic dopamine system and possibly induce impulsive behavior (Berridge and Aldridge, 2008).

Recently, ‘wanting’–‘liking’ dissociations were related to willpower mentioned in section 3. Vohs and Faber (2007) suggest that when individuals are low on willpower and have depleted their self-regulatory resources, ‘wanting’–‘liking’ dissociations and impulsive buying might occur more often. Ego-depleted consumers might be more prone to the unconscious influences of motivation and hedonic reward and, hence, be more strongly driven by urges characterized by ‘wanting’ without expected liking (Vohs and Faber, 2007). Lack of willpower may even undermine the consumers’ free will to ‘want’ what they ‘like’ (Baumeister et al., 2008). However, additional to the cognitive aspects of reflexive thought, i.e. willpower and self-control, motivational aspects of reflexive thought also play a role in intertemporal choice.

The motivational aspects of reflexive thought are prominent in identity-related needs, commonly called self-image motives (Dunning, 2007; Sedikides and Strube, 1997).⁶ Due to

⁵Following Lades (2011), the motivation $V(s_t)$ to consume a consumer good c_t which is rewarding ($r(c_t) > 0$) can be formalized as follows:

$$V(s_t) = E_t \left[r(c_t)(1 + s_t \cdot k_t \cdot \eta_t \cdot (1 - SC_t)) + \sum_{i=1} \delta^i (r(c_{t+i})) \right], \quad (1)$$

where the binary variable s_t is the cue, $k_t; 0 \leq k_t \leq 1$ the consumer knowledge, $\eta_t > 0$ the need deprivation state, $SC_t; 0 \leq SC_t \leq 1$ the self-control resource, and $\delta \in [0, 1]$ a constant discount factor. Cue-triggered ‘wanting’ is reflected by $(s_t \cdot k_t \cdot \eta_t) > 0$.

⁶In economics, there is a small but growing literature that integrates the importance of self-images in the economic analysis (Akerlof and Kranton, 2000; Benabou and Tirole, 2002; Brekke et al., 2003; Davis, 2007; Fine, 2009; Johansson-Stenman and Martinsson, 2006; Koeszegi, 2006; Loewenstein, 1999). For example, Brekke et al. (2003) explain why individuals voluntarily contribute to public goods through the individual desire to maintain positive moral self-images. Loewenstein (1999) shows that individuals (in this case, mountaineers) are motivated by the desire to impress themselves, rather than others.

their capacity for reflexive thought, individuals think about themselves and these thoughts can evoke emotions, as well as motivational power. Individuals perceive and evaluate themselves, create images of themselves, and favor certain self-images over others. Individuals can perceive themselves at different levels (personal, relational, and social), and these different self-image levels coexist in a given individual, able to be activated at different times and in different contexts (Markus and Wurf, 1987). Salient self-images influence behavior by filtering the information individuals receive, process, and memorize. To evaluate themselves, individuals use their ideal self-images as reference standards. Differences between how the individuals ideally want to be (normative, ideal, or ought self-images) and how they actually view themselves (descriptive or actual self-images) lead to psychological discomfort (Higgins, 1987). This discomfort induces the desire to reduce these self-image discrepancies. One way to reduce self-image discrepancies is to search for information that increases the positivity of one's actual self-image. The self-image motive to favor positive self-images over less positive ones, i.e. the tendency to reduce self-image discrepancies, is called self-enhancement (e.g. Leary, 2007; Sedikides and Strube, 1997). Self-image motives operate in both the cognitive System 1 and the automatic System 2. Explicit self-reflections can consciously alter behavior when one is not happy with one's self-perception. However, individuals are usually not aware of the fact that their decisions are partly driven by self-image discrepancies. Self-images can affect behavior implicitly in a way that is automatic, beyond the individual's control, and below the individual's conscious awareness (Devos and Banaji, 2003; Dunning, 2007; Rameson et al., 2010).

One particular way to obtain information about oneself, and to satiate the self-image motive of self-enhancement, is to consume products with symbolic, identity-relevant meanings that are congruent with individual ideal self-images (Sirgy, 1982). Individuals consciously, or unconsciously, expand their personal core selves to include certain possessions and, after this expansion, regard their possessions as being parts of themselves. By consuming identity-relevant goods, individuals can signal to themselves and to others who they are as they incorporate the symbolic meanings of these goods (Belk, 1988). Hence, when an individual consumes a good with an identity-relevant symbolic meaning that is congruent with the individual's ideal self-image, the individual can move closer to her ideal self-image and thereby temporarily satisfy her need for self-enhancement. Wicklund and Gollwitzer (1982) call this behavior symbolic self-completion. Symbolic self-completion compensates for perceived inadequacies, such as self-image discrepancies between actual and ideal self-images. Wicklund and Gollwitzer show, for example, that business students who lack good qualifications display more material symbols than students with better career prospects. More recently, Gao et al. (2009) show that threats to important self-images can momentarily shake one's confidence in the respective self-image and thus alter consumer behavior. Shaken self-images induce individuals to choose goods that help them to restore their confidence in the threatened self-image. When, for example, individuals write an essay about their intelligence with their non-dominant hand, their self-image of

being intelligent is threatened and they tend to prefer pens over candy (Gao et al., 2009).

Self-image motives or identity-related needs are likely to play a role in almost all consumption decisions for those goods that have a symbolic meaning. Previous research, however, suggests that self-images are involved in impulsive consumption to a larger extent than in “ordinary” buying (Dittmar and Bond, 2010; Dittmar and Drury, 2000; Verplanken and Sato, 2011; Zhang and Shrum, 2009). Dittmar and colleagues argue that self-images play a role in the occurrence of impulses and desires to consume. Dittmar and Bond (2010), for example, show that consumer goods with high identity-expressive potential (clothes, jewelery, sports gear) elicit a stronger tendency for impulsive buying behavior than consumer goods lacking this feature. This effect, however, is present only for individuals with materialistic world-views and salient self-image discrepancies at the moment of the consumption decision. Individuals with materialistic world-views believe that the accumulation of consumer goods is a central life goal and a key to happiness. These individuals believe that consuming identity-relevant products is a proper way to satiate currently deprived identity-related needs (Dittmar and Bond, 2010).

These findings are compatible with the explanation of impulsive consumption based on the cue-triggered ‘wanting’ mechanism. An essential requirement for cue-triggered ‘wanting’ to occur is mesolimbic activation in the brain. As mesolimbic activation does not only occur during physiological need deprivation states, but also in many emotional situations that can be either rewarding or stressful (Berridge and Aldridge, 2008), self-image discrepancies are also likely to induce cue-triggered ‘wanting’. As a second requirement, individuals have to implicitly or explicitly know that the identity-related goods can reduce their self-image discrepancies. This holds true only for individuals with materialistic world-views. Hence, when materialistic individuals have self-image discrepancies, i.e. are deprived of an identity-related need, the perception of cues associated with identity-relevant consumption goods induces a ‘want’ to consume these identity-relevant goods.⁷ This increased motivation to buy such goods may exceed the degree to which the individuals expect to like, or actually ‘like’, the goods. Consequently, cues can casue individuals to impulsively ‘want’ identity-relevant goods that they turn out not to ‘like’ after, or during, the purchase.⁸ For example, when an individual’s actual self-image falls short in a social comparison with an ideal self-image adopted from the mass media, the individual

⁷Adapting the incentive salience model presented in Lades (2011) to the case of identity-related consumption leads to the following formulation of the individual’s motivation $V(s_t)$ to consume an identity-relevant good c_t that is rewarding ($r(c_t) > 1$):

$$V(s_t) = E_t \left[r(c_t)(1 + s_t \cdot MWV_t \cdot f(ISI_t - ASI_t) \cdot (1 - SC_t)) + \sum_{i=1} \delta^i (r(c_{t+i})) \right], \quad (2)$$

where s_t is the cue, MWV_t the materialistic world-view, ISI_t the ideal self-image, ASI_t the actual self-image, SC_t the self-control resource, and $\delta \in [0, 1]$ a constant discount factor.

⁸The feeling of not being the person an individual ideally likes to be might also change the degree to which identity-related goods are liked and therefore wanted. However, these changes in enjoyment, and subsequent changes of motivation to consume, do not create the urges inducing impulsive behavior.

explicitly or implicitly perceives a discrepancy between who s/he ideally wants to be and who s/he actually is. When such a self-image discrepancy is salient and the individual has a materialistic world-view, in the case where s/he perceives some fashionable clothes that correspond to his or her ideal self-image, this perception induces the ‘want’ to immediately buy the clothes. In this case, one can speak of pure impulsive consumption of identity-related goods. Such short-term elevated ‘wanting’ levels may explain why individuals oftentimes do not ‘like’ their clothes afterwards when they no longer have salient self-image discrepancies.

By stressing the motivational aspects of reflexive thought, manifested in self-image motives, additional parts of the domain effect in intertemporal choice can be explained. In addition to physiological need deprivation states like hunger, thirst, and drug-addiction, psychological need deprivation states related to one’s identity can also induce cue-triggered ‘wanting’. Those goods that have high identity-expressive potential (clothes) tend to be consumed impulsively more often than goods lacking identity-expressive potential (basic body care or garden tools) (Dittmar and Bond, 2010). By investigating the aspects of reflexive thought that correspond to the automatic System 1, rather than the cognitive System 2, further insights on the sources of motivation can be revealed. This is not possible by referring to the cognitive aspects of reflexive thought alone.

5 Libertarian Paternalism: As Judged by Whom?

Behavioral economists have begun to apply their findings to policy issues, endowing these suggestions with the name of libertarian paternalism (Thaler and Sunstein, 2008). In the US and the UK, these implications have already gained considerable political attention. In the UK, for example, the government has created a behavioral insights team, commonly called the nudge unit. Libertarian paternalism refers to policy interventions that change the context (in libertarian paternalistic terms, the choice architecture) in which individuals make decisions. By changing the choice architecture, Thaler and Sunstein (2008) argue, individuals can be nudged to behave in their own best self-interests. Thaler and Sunstein (2008) call a change of the choice architecture libertarian when it maintains individual freedom of choice at the least possible cost. The authors call a policy paternalistic “if it tries to influence choices in a way that makes choosers better off, *as judged by themselves*” (emphasis in the original, page 5). Hence, only nudges should be offered that are most likely to help and least likely to inflict harm. In the case of impulsive consumption, behavior in the best interests of the individual can be defined by the absence of ‘wanting’–‘liking’ dissociations. That is, when individuals strongly ‘want’ a good, but do not ‘like’ the good sufficiently to consume it under normal circumstances, a resulting impulsive consumption act is against the consumer best interests. Accordingly, a policy intervention impacting impulsive behavior can be called libertarian when individuals are still free to choose every good they ‘want’, even if they do not ‘like’ it, and it can be called paternalistic

when it tries to reduce ‘wanting’–‘liking’ dissociations.

In the context of this paper, Thaler and Sunstein’s (2008) definition of paternalism, and in particular the emphasis on “*as judged by themselves*”, deserves a closer look, since it is not obvious who “themselves” refers to in the definition. “Themselves” can be defined on at least two levels, namely either on the level of the decision making system or on the level of the self-image. Regarding the former, Thaler and Sunstein’s (2008) position is quite clear. Nudges can only be used to change intuitive behavior in System 1, while the rational, non-biased System 2 is not affected by them. It is System 2 that judges what is good for the individual in the long run and, accordingly, maintains individual autonomy. Regarding the latter, i.e. the self-image, such a clear-cut position is harder to take on. Currently salient self-images play a role when judging which choices make individuals better off, because they filter the information individuals receive, process, and memorize. However, self-images exist at different levels, dynamically change over time and contexts, and can conflict with each other (Markus and Wurf, 1987). Consider, for example, two agents who are similar to each other with one exception: The first agent, say *A*, has a predominant self-image of being a scholar and the self-image of the other agent, say *B*, is predominantly that of a wine lover. Whereas *A* does not like his urges to consume wine, *B* enjoys following them. As a result, the ‘wanting’–‘liking’ dissociation that characterizes impulsive wine consumption by agent *A* is much larger than the ‘wanting’–‘liking’ dissociation that characterizes impulsive wine consumption by agent *B*. Accordingly, while at the end of the day agent *A* judges a nudge that reduces impulsive wine consumption (for example a mental budget for wine (Thaler, 1999)) as being beneficial, agent *B* does not. It may even be the case that the nudge reduces agent *B*’s well-being as it increases the psychological costs related to wine consumption, thus creating a psychic tax that reduces well-being without providing revenues (Glaeser, 2006; Loewenstein and O’Donoghue, 2006). From the perspective of a third party, however, agent *A* and agent *B* do not differ from each other. Self-images are highly subjective issues difficult to evaluate for third parties. Hence, it can be claimed that it is very difficult for third parties to calculate the costs and benefits of nudges for populations with a variety of self-images. This calculation of costs and benefits, however, is an important component in the logic of libertarian paternalism. Accordingly, when self-images differ across individuals, nudges by third parties should be viewed with caution. It is difficult for third parties to identify who is meant by “themselves” in Thaler and Sunstein’s (2008) definition of paternalism.

This difficulty does not undermine the usefulness of libertarian paternalism. As a consequence of this difficulty, however, it may be preferable if the choice architect who determines the nudges is the individual herself (or rather her System 2) instead of a third party. If anybody knows which self-image is predominantly salient in an individual, it is the individual herself. Hence, it is easier for individuals to integrate the different frequencies with which self-images are salient into the cost benefit analysis of nudges than it is for third

parties. Individuals are therefore less likely to make well-being reducing errors than third parties when engaging in nudging activities. If both options are available, self-imposed nudges should be preferred over nudges by third parties. These third parties, however, may provide mechanisms that individuals can utilize to nudge themselves, if so desired. Additionally, third parties are sometimes in good positions to inform the individuals of potential sources of errors. Such information provision can make use of framing effects or other biases discovered by behavioral economics, as long as individuals are not affected when making choices solely by System 2 (Cordes and Schubert, 2011). Hence, the value of third parties may be in communicating information in specific ways and providing mechanisms that allow individuals to nudge themselves. In what follows, three possibilities are presented of how choice architects (third parties, but also System 2) can nudge System 1 on individuals to make impulsive consumption more ethical.

6 Nudging Ethical Consumer Behavior

The first strategy to encourage an ethical way of impulsive consumption presented in the paper is to strengthen willpower's position in the struggle between willpower (System 2) and impulses (System 1). By using willpower, impulsive urges to consume unnecessary goods can be restrained. When consumption is redundant, offers no increases in well-being, and harms the environment, it can be considered as unethical. To help System 2 control urges to consume unnecessary goods individuals can use external control devices such as soft and hard commitments. While hard commitments have real economic penalties for failure, soft commitments rely on the psychological consequences of not sticking to one's commitments (Bryan et al., 2010). Examples of external devices include saving accounts that restrict withdrawals (Ashraf et al., 2006), Christmas saving clubs, informal bets, and voluntarily putting one's name on a list of people who are banned from gambling in casinos (Thaler and Sunstein, 2008). As a commitment device to reduce one's impulsive wine consumption, one can take only a limited amount of money and no credit card to the restaurant. However, the evolutionary perspective on the motivational foundations of economic behavior presented in section 4 has more to say about internal control mechanisms than about such external devices.

When internal control mechanisms are used, individuals have to rely more strongly on their willpower than when they use external control devices. To strengthen willpower in its struggle against impulsive urges, it is helpful to equip willpower with good arguments to fight the urges. The knowledge that impulsive urges can be characterized by 'wanting'-'liking' dissociations is an example of an argument that may strengthen System 2's position to not eat the tempting junk food in the cafeteria. This knowledge may prevent individuals from engaging in rationalization processes in which they explain current urges to themselves by arguing that they really like the currently desired junk food. On the contrary, knowing that the sight of the junk food in front of you cued you to 'want' it,

but did not increase its taste, may help you to find a good rationale for not eating it. The same logic can be applied to the impulsive consumption of unnecessary goods. Knowing about the cue-triggered ‘wanting’ mechanism and the role of self-image discrepancies, may induce individuals to re-think their intention to buy, for example, some new clothes. This may lead to a lower share of clothes that are bought, but never donned, and hence reduce unnecessary expenses for the consumers, as well as harm for the environment. Hence, to reduce redundant impulsive consumption, information programs could communicate the (non-intuitive) existence of ‘wanting’–‘liking’ dissociations and provide realistic examples where cue-triggered ‘wanting’ drives behavior. The evolutionary perspective presented in section 4 helps to identify these examples, by suggesting which products are most likely to be purchased impulsively. Individuals can find ways to nudge themselves to make salient this knowledge of ‘wanting’–‘liking’ dissociations in situations where the individuals are likely to impulsively act against their self-interests. Providing the information about the errors that individuals tend to make, as well as providing the information about the situations in which these errors are likely to occur, is not paternalistic as it does not reduce the individuals’ autonomy and freedom of choice. It however helps individuals to nudge themselves and thus may have a discernible influence on the behavior of individuals with sufficient reflexive capacity, even in moments where impulses occur.

The second strategy to encourage ethical consumption is to reduce the frequency with which impulsive urges to consume unnecessary goods occur.⁹ When such urges do not occur, willpower is not needed in the first place. By arranging the architecture for future choices, System 2 can play offense, rather than defense (Baumeister and Tierney, 2011, p. 254), and thus avoid critical situations altogether. Hoch and Loewenstein (1991) suggest three self-control tactics to reduce impulsive desires. These are avoidance, postponement and distraction, and substitution. The motivational account of impulsivity helps to elaborate on these tactics. One refinement it suggests is that avoiding proximity to a tempting product is only useful when the individual is currently deprived of a need that could be satisfied by the product in question. The proximity to junk food, for example, will not induce urges in satiated individuals. This is especially important in situations where one cannot prevent getting close to potentially tempting products, the checkout aisles in supermarkets being an example (Houser et al., 2008). System 2 can reduce the impulses that would occur in such situations by nudging the individual to eat a little snack before going grocery shopping. Putting a reminder in one’s car saying that one should not go grocery shopping when hungry may be a sufficient nudge so that System 2 can avoid impulses occurring later at the supermarket checkout. In the same vein, System 2 can also reduce the amount of impulsively bought clothes that are almost never worn and stay in one’s wardrobe most of the time. To do so, System 2 has to make sure that, when purchasing

⁹Strengthening willpower refers to an increase of SC_t in Lades’s (2011) formalization. Impulsive urges can be reduced by reducing either the exposure to cues (s_t), the consumer knowledge (k_t), or the need deprivation states (η_t). These three factors can also be influenced to guide impulsive consumption to certain directions, which is the third strategy presented in the paper.

decisions are taken, System 1 is not currently influenced by self-image discrepancies. Consumers can, for example, bolster their self-image before buying clothes by thinking about positive evaluations they received in the past. Generally, consumers trying to reduce impulsive urges can use nudges to remind themselves not to make decisions while being in a need deprivation state.

Detecting, and hence reducing, self-image discrepancies, however, is more difficult than realizing that one is hungry and eating a snack before going grocery shopping. When hungry, individuals most of the time explicitly perceive this deprivation state. Self-image discrepancies, however, are less salient and might operate more often under the radar of consciousness (Devos and Banaji, 2003). Accordingly, reducing self-image discrepancies is likely to be more difficult than reducing hunger. An alternative way to reduce impulsive desires evoked by self-image discrepancies is thus needed. Individuals can, for example, try to avoid situations in which they are exposed to cues that would interact with self-image discrepancies and thus trigger impulsive urges. To reduce the likelihood of being exposed to such cues, individuals can favor shopping environments in which certain role-models, for example artificially adjusted “perfect” bodies, are less salient than in other shopping environments (Dittmar and Halliwell, 2008). Policies could also attempt to reduce such cues in shopping environments.

Another way to reduce impulsive desires evoked by self-image discrepancies is to influence the ideal self-images of individuals. Ideal self-images that are realistic and stable over time are not very likely to induce self-image discrepancies. However, when ideal self-images change rapidly and become unrealistically high, self-image discrepancies will occur. Many individuals adopt their ideal self-images from role models presented in the media (Dittmar and Halliwell, 2008). These role-models, and ideal self-images, tend to change rapidly, thus destabilizing individual ideal self-images. Accordingly, there is an increasing possibility that self-image discrepancies will occur no matter how hard one tries to reduce previous self-image discrepancies. Repeatedly adopting new ideal self-images can lead to undesirable preference learning paths, characterized by an increasing demand for consumption without an increase in well-being (Cordes and Schubert, 2011). The undesirable effects of unstable ideal self-images are even stronger when the newly adopted ideal self-images are unrealistically high. For example, having the “body perfect” and living the “good life” are ideal self-images that are often desired, but impossible to achieve (Dittmar and Halliwell, 2008). To stabilize ideal self-images at realistic levels, interference in the development of ideal self-images may be desirable. Individuals can, for example, try to slow down the process with which they adopt new ideal self-images by reducing their exposure and attention to advertisement. Also, individuals can consciously choose their role models. Policies that aim at preventing individuals from adopting unrealistically high ideal self-images can require advertisers to declare whenever the (role) models that appear in the ads are photoshopped. Photoshopped (role) models tend to have unrealistically perfect bodies that some individuals accept as benchmarks for themselves. As an effect of such a declaration,

it is likely that individuals stop considering the photoshopped models as role models for themselves. Attempts to stabilize ideal self-images at realistic levels are not restricted to specific situations in the sense that interfering in the development of ideal self-images does not only change contextual factors of current decision situations. Additionally, it triggers a slower and more lasting process that changes the preferences (related to self-image discrepancies) underlying impulsive choices. As preferences are not exogenously given, but are subject to change over time, individuals can influence these preference learning processes, for example by influencing which ideal self-images they adopt.¹⁰

The third strategy to nudge ethical impulsive consumption differs from the first two strategies in that it does not try to reduce unnecessary impulsive behavior. On the contrary, it uses the human tendency to behave impulsively and tries to guide impulsive behavior in ethical directions. Instead of reducing impulsive consumption by, for example, putting psychic taxes on impulsive purchases (Loewenstein and O'Donoghue, 2006), ethical impulsive consumption can be reinforced by creating psychological benefits. Just as psychological taxes can reduce individual well-being without yielding government revenues (Glaeser, 2006), psychological benefits may increase individual well-being without requiring much governmental expenditures. In order to encourage ethical impulsive consumption, and thus guide individual impulsive behavior to ethical directions, knowledge of the mechanisms underlying impulsive choices is especially useful. In section 4, the mechanism that induces impulsive urges to buy identity-relevant products, such as clothes, was described. Clothes tend to be consumed impulsively when individuals with materialistic world-views and currently salient self-image discrepancies perceive cues pertaining to identity-relevant clothes (Dittmar and Bond, 2010). Clothes, however, are not the only type of identity-relevant products. For individuals who consider themselves to be ethical consumers, ethical products are identity expressive as well. Hence, it is likely that individuals sometimes impulsively consume ethical products, when their self-image of being an ethical consumer is threatened. Accordingly, ethical or sustainable consumption is not solely the result of cognitive deliberation in System 2. Rather, ethical consumption can also be the result of impulsive urges in System 1, as long as self-image discrepancies between ideal and actual self-images exist.

In order to nudge themselves to impulsively consume ethical products, individuals have to consider the three factors presented in section 4, namely self-image discrepancies, consumer knowledge, and cues. Regarding the first factor, individuals in the cold mode driven by System 2 can decide to create artificial discrepancies between the ideal self-image of being an environmentally friendly consumer and its actual self-image. To do so, it might be enough to think about some past vices before going shopping. Such thoughts may increase the likelihood of impulsively buying a slightly more expensive, but ethical product.

¹⁰This hints at a general difference between the behavioral economic and the evolutionary perspective on economic behavior. Although both approaches deal with changing preferences, behavioral economics emphasizes how situational factors influence them, while the evolutionary perspective is concerned with long-term preference changes.

Just like some individuals voluntarily starve themselves for a while to increase the pleasure derived from subsequent eating, other individuals might create self-image discrepancies to influence their subsequent impulsive consumption choices. This, of course, presupposes an existing ideal self-image of being an environmentally-friendly consumer. Governmental programs could foster such self-definitions by, for example, supporting famous role-models that appear in the media behaving in an environmentally-friendly way.

However, even when urges to behave in an ethical way occur, it is not yet obvious that these urges will manifest themselves in impulsive consumption activities. There have to be products around that the ethical consumers can regard as being expressive of their environmentally friendly identity. In other words, consumer knowledge relating the products' symbolic meanings and the individuals' self-images has to exist. Firms, and also the government, can (and actually do) provide information to create this consumer knowledge relating ethical products to ethical self-images. Many advertising strategies aim at creating consumer knowledge of this kind. For example, it is in the best interest of organic firms to announce and declare their products as being organic. The moral benefits of organic production should be communicated in credible and realistic ways in order to create the consumer knowledge that such products are indeed expressive of ethical self-images. The government should support the creation of such consumer knowledge. The declaration of these products via organic labels is especially important, since, in addition to generating consumption knowledge, these labels can act as cues that trigger impulsive choices of ethical products.

To conclude the discussion about practical implications, some final remarks regarding the potential to nudge impulsive choices to ethical directions follow. Ethical behavior induced by self-image motives should be especially visible in relatively affluent societies where other, more striving needs (e.g. hunger) are already satiated, and where more individuals tend to have self-images of being ethical consumers. Moreover, the influence of self-image discrepancies is not restricted to "small" choices. Bigger choices, such as which car to buy, are also influenced by intuitions and urges. Salient and deprived self-images of being environmentally friendly may induce an urge to buy a small, energy-saving car instead of a SUV. In such big decisions, urges are likely to be relatively less important than in small choices. Nevertheless, at the margin, such impulses might tip the balance toward purchasing an environmentally friendly car. While the first two approaches aim at reducing the tendency to consume impulsively, the third approach utilizes the tendency to behave impulsively in order to guide impulsive consumption to ethical directions.

7 Concluding Remarks

The aim of libertarian paternalism is to help individuals make better choices, as judged by themselves. To do so, it is important to know about the reasons why individuals

sometimes deviate from behavior that is in their best interest. Commonly, behavioral economics elaborates on these reasons, among other things, by identifying biases in the decisions made by the automatic System 1. In the context of impulsive consumption, behavioral economics acknowledges that the automatic System 1 is myopic and strives for immediate gratification. However, with few exceptions, it is not explained why this is the case. As a result, libertarian paternalistic implications following from this research most often aim at reducing the consequences of given urges, for example, by suggesting commitment strategies that inhibit urges from translating into actual behavior. Taking an evolutionary perspective, this paper elaborated on the motivational foundations of impulsive behavior. It presented the cue-triggered ‘wanting’ mechanism as one potential motivational source of impulsive urges. Based on the knowledge of this mechanism, the paper suggested libertarian paternalistic implications to encourage ethical consumption by either reducing unnecessary impulsive consumption, or guiding impulsive consumption in ethical directions.

To conclude the paper, I present two normative implications that arise when understanding impulsive consumption as driven by cue-triggered ‘wanting’ and characterized by ‘wanting’–‘liking’ dissociations. First, choices that are characterized by ‘wanting’–‘liking’ dissociations do not reflect what individuals ‘like’ best. Hence, the concept of revealed preferences has to be questioned when goods are consumed impulsively. What is revealed is ‘wanting’, not ‘liking’. The concept of revealed preferences does not consider the causes for certain actions. On the contrary, the evolutionary perspective takes into account the causes for actions (Witt and Schubert, 2010). When the cause of an action to consume is cue-triggered ‘wanting’ ($>$ ‘liking’), one cannot automatically infer that a higher level of well-being results from the choice. Accordingly, integrating the mechanism of cue-triggered ‘wanting’ leads to a different account of the welfare that can be obtained through impulsive consumption. It can be argued that impulsive consumption should be weighted less than other types of consumption in the welfare calculus, and the reduction of the moral weight of impulsive consumption should reflect the ‘wanting’–‘liking’ dissociation. Second, ‘wanting’–‘liking’ dissociations might play a role in the process by which new preferences are learned, thus influencing individual happiness. Recently, Schubert (2012) argued that the pursuit of happiness involves more than just the enjoyment of procedural utility. Individuals also enjoy the exploration of new sources of hedonic utility, i.e. individuals enjoy preference learning. However, preference learning is hindered when individuals exclusively consume those products that they already expect to like. Cue-triggered ‘wanting’ is one reason why individuals try out new tastes that they have not liked before. Individuals, for example, sometimes enjoy going grocery shopping when they are very hungry. The decision about which good to buy is thereby passed on to the impulsive urges occurring in System 1. Hence, although impulsive consumption may be weighted less in the welfare calculus using procedural utility, it may ultimately increase well-being when also preference learning is considered.

References

- Akerlof, G. and Kranton, R. (2000). Economics and identity. *Quarterly Journal of Economics*, 115(3):715–753.
- Ariely, D. and Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making*, 19(2):87–98.
- Ashraf, N., Karlan, D., and Yin, W. (2006). Tying odysseus to the mast: Evidence from a commitment savings product in the *The Quarterly journal of economics*, 121(2):635–672.
- Bartels, D. and Urminsky, O. (2011). On intertemporal selfishness: How the perceived instability of identity underlies impatient consumption. *Journal of Consumer Research*, 38(1):182–198.
- Baumeister, R. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research*, 28(04):670–676.
- Baumeister, R., Sparks, E., Stillman, T., and Vohs, K. (2008). Free will in consumer behavior: Self-control, ego depletion, and choice. *Journal of Consumer Psychology*, 18(1):4–13.
- Baumeister, R. and Tierney, J. (2011). *Willpower: Rediscovering the Greatest Human Strength*. The Penguin Press.
- Beatty, S. and Ferrell, E. (1998). Impulse buying: Modeling its precursors. *Journal of Retailing*, 74(2):169–191.
- Belk, R. (1988). Possessions and the extended self. *Journal of Consumer Research: An Interdisciplinary Quarterly*, 15(2):139–68.
- Benabou, R. and Tirole, J. (2002). Self-Confidence and Personal Motivation. *Quarterly Journal of Economics*, 117(3):871–915.
- Bernheim, B. and Rangel, A. (2004). Addiction and cue-triggered decision processes. *The American Economic Review*, 94(5):1558–1590.
- Berridge, K. (1999). Pleasure, pain, desire, and dread: Hidden core processes of emotion. In Kahneman, D., Diener, E., and Schwarz, N., editors, *Well-being: The Foundations of Hedonic Psychology*, pages 525–557. Russell Sage Foundation.
- Berridge, K. (2002). Irrational pursuits: Hyper-incentives from a visceral brain. *The Psychology of Economic Decisions: Rationality and Well-Being*, 1:17–40.
- Berridge, K. (2009). Wanting and liking: observations from the neuroscience and psychology laboratory. *Inquiry*, 52(4):378–398.

- Berridge, K. and Aldridge, J. (2008). Decision utility, the brain, and pursuit of hedonic goals. *Social Cognition*, 26(5):621–646.
- Berridge, K., Ho, C., Richard, J., and DiFeliceantonio, A. (2010). The tempted brain eats: Pleasure and desire circuits in obesity and eating disorders. *Brain Research*, 1350:43–64.
- Brekke, K., Kverndokk, S., and Nyborg, K. (2003). An economic model of moral motivation. *Journal of Public Economics*, 87(9-10):1967–1983.
- Bryan, G., Karlan, D., and Nelson, S. (2010). Commitment devices. *Annual Review of Economics*, 2(1):671–698.
- Buccioli, A., Houser, D., and Piovesan, M. (2011). Temptation and productivity: A field experiment with children. *Journal of Economic Behavior & Organization*, 78(1-2):126–136.
- Burger, N., Charness, G., and Lynham, J. (2011). Field and online experiments on self-control. *Journal of Economic Behavior & Organization*, 77(3):393–404.
- Burnham, T. and Hare, B. (2007). Engineering human cooperation. *Human Nature*, 18(2):88–108.
- Camerer, C., Loewenstein, G., and Prelec, D. (2005). Neuroeconomics: How neuroscience can inform economics. *Journal of Economic Literature*, 43(1):9–64.
- Camerer, C. F. (2006). Wanting, liking, and learning: Neuroscience and paternalism. *The University of Chicago Law Review*, 73:87–110.
- Cordes, C. and Schubert, C. (2011). Role models that make you unhappy: Light paternalism, social learning and welfare. *Papers on Economics and Evolution*, 2011(22).
- Dai, X., Brendl, C., and Ariely, D. (2010). Wanting, Liking, and Preference Construction. *Emotion*, 10(3):324–334.
- Davis, J. (2007). Akerlof and Kranton on identity in economics: inverting the analysis. *Cambridge Journal of Economics*, 31(3):349.
- Devos, T. and Banaji, M. (2003). Implicit self and identity. *Annals of the New York Academy of Sciences*, 1001(1):177–211.
- Dittmar, H. and Bond, R. (2010). 'I want it and I want it now': Using a temporal discounting paradigm to examine predictors of consumer impulsivity. *British Journal of Psychology*, 101:751–776.
- Dittmar, H. and Drury, J. (2000). Self-image-is it in the bag? A qualitative comparison between ordinary and excessive consumers. *Journal of Economic Psychology*, 21(2):109–142.

- Dittmar, H. and Halliwell, E. (2008). *Consumer culture, identity and well-being: the search for the "good life" and the "body perfect"*. European monographs in social psychology. Psychology Press.
- Dunning, D. (2007). Self-image motives and consumer behavior: How sacrosanct self-beliefs sway preferences in the marketplace. *Journal of Consumer Psychology*, 17(4):237–249.
- Estle, S., Green, L., Myerson, J., and Holt, D. (2007). Discounting of monetary and directly consumable rewards. *Psychological Science*, 18(1):58–63.
- Fine, B. (2009). The Economics of Identity and the Identity of Economics? *Cambridge Journal of Economics*, 33(2):175–191.
- Frederick, S., Loewenstein, G., and O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature*, 40(2):351–401.
- Gao, L., Wheeler, S., and Shiv, B. (2009). The "shaken self": Product choices as a means of restoring self-view confidence. *Journal of Consumer Research*, 36(1):29–38.
- Gilbert, D. and Wilson, T. (2000). Miswanting: Some problems in the forecasting of future affective states. *Feeling and thinking: The role of affect in social cognition*, pages 178–197.
- Giordano, L., Bickel, W., Loewenstein, G., Jacobs, E., Marsch, L., Badger, G., et al. (2002). Mild opioid deprivation increases the degree that opioid-dependent outpatients discount delayed heroin and money. *Psychopharmacology*, 163(2):174.
- Glaeser, E. (2006). Paternalism and psychology. *University of Chicago law review*, 73(1):133–156.
- Hausman, A. (2000). A multi-method investigation of consumer motivations in impulse buying behavior. *Journal of Consumer Marketing*, 17(5):403–426.
- Heatherton, T. and Wagner, D. (2011). Cognitive neuroscience of self-regulation failure. *Trends in cognitive sciences*, 15(3):132–139.
- Hershfield, H. (2011). Future self-continuity: how conceptions of the future self transform intertemporal choice. *Annals of the New York Academy of Sciences*, 1235(1):30–43.
- Higgins, E. (1987). Self-discrepancy: A theory relating self and affect. *Psychological review*, 94(3):319–340.
- Hoch, S. and Loewenstein, G. (1991). Time-inconsistent preferences and consumer self-control. *Journal of Consumer Research*, 17(4):492–507.

- Houser, D., Reiley, D., and Urbancic, M. (2008). Checking out temptation: A natural experiment with purchases at the grocery register. *Unpublished manuscript, University of California, Berkeley, University of Arizona, and George Mason University.*
- Johansson-Stenman, O. and Martinsson, P. (2006). Honestly, why are you driving a BMW? *Journal of Economic Behavior & Organization*, 60(2):129–146.
- Kable, J. and Glimcher, P. (2007). The neural correlates of subjective value during intertemporal choice. *Nature Neuroscience*, 10(12):1625–1633.
- Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar Straus & Giroux.
- Kahneman, D. and Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica: Journal of the Econometric Society*, pages 263–291.
- Kahneman, D., Wakker, P., and Sarin, R. (1997). Back to Bentham? Explorations of Experienced Utility. *Quarterly Journal of Economics*, 112(2):375–405.
- Koeszegi, B. (2006). Ego utility, overconfidence, and task choice. *Journal of the European Economic Association*, 4(4):673–707.
- Kroeber-Riel, W., Weinberg, P., and Groeppel-Klein, A. (1992). *Konsumentenverhalten*. Vahlen.
- Lades, L. K. (2011). Towards an incentive salience model of intertemporal choice. *Papers on Economics and Evolution*, 2011(18).
- Laibson, D. (1997). Golden Eggs and Hyperbolic Discounting. *Quarterly Journal of Economics*, 112(2):443–477.
- Leary, M. (2007). Motivational and emotional aspects of the self. *Annual Review of Psychology*, 58:317–44.
- Litt, A., Khan, U., and Shiv, B. (2010). Lusting while loathing. *Psychological Science*, 21(1):118–125.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65(3):272–292.
- Loewenstein, G. (1999). Because it is there: The challenge of mountaineering... for utility theory. *Kyklos*, 52(3):315–343.
- Loewenstein, G. (2000). Emotions in economic theory and economic behavior. *The American Economic Review*, 90(2):426–432.
- Loewenstein, G. and O'Donoghue, T. (2006). "We Can Do This the Easy Way or the Hard Way": Negative Emotions, Self-Regulation, and the Law. *The University of Chicago Law Review*, 73(1):183–206.

- Markus, H. and Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38(1):299–337.
- McClure, S., Ericson, K., Laibson, D., Loewenstein, G., and Cohen, J. (2007). Time discounting for primary rewards. *Journal of Neuroscience*, 27(21):5796–5804.
- McClure, S., Laibson, D., Loewenstein, G., and Cohen, J. (2004). Separate neural systems value immediate and delayed monetary rewards. *Science*, 306(5695):503–507.
- Metcalf, J. and Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106(1):3–19.
- Rameson, L., Satpute, A., and Lieberman, M. (2010). The neural correlates of implicit and explicit self-relevant processing. *NeuroImage*, 50(2):701–708.
- Robinson, T. and Berridge, K. (1993). The neural basis of drug craving: an incentive-sensitization theory of addiction. *Brain Research Reviews*, 18(3):247–291.
- Robinson, T. and Berridge, K. (2008). The incentive sensitization theory of addiction: some current issues. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 363(1507):3137–3146.
- Rook, D. (1987). The buying impulse. *Journal of Consumer Research*, 14(2):189–199.
- Schubert, C. (2012). Pursuing happiness. *Kyklos*, forthcoming.
- Sedikides, C. and Strube, M. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. *Advances in Experimental Social Psychology*, 29:209–269.
- Shiv, B. and Fedorikhin, A. (1999). Heart and mind in conflict: The interplay of affect and cognition in consumer decision making. *Journal of Consumer Research*, 26(3):278–292.
- Sirgy, M. (1982). Self-concept in consumer behavior: A critical review. *Journal of Consumer Research: An Interdisciplinary Quarterly*, 9(3):287–300.
- Stern, H. (1962). The significance of impulse buying today. *The Journal of Marketing*, 26(2):59–62.
- Strack, F., Werth, L., and Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology*, 16(3):205–216.
- Thaler, R. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12:183–206.
- Thaler, R. and Sunstein, C. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.

- Verplanken, B. and Sato, A. (2011). The psychology of impulse buying: An integrative self-regulation approach. *Journal of Consumer Policy*, 34(2):197–210.
- Vohs, K. and Faber, R. (2007). Spent resources: Self-regulatory resource availability affects impulse buying. *Journal of Consumer Research: An Interdisciplinary Quarterly*, 33(4):537–547.
- Wicklund, R. and Gollwitzer, P. (1982). *Symbolic self-completion*. Lawrence Erlbaum.
- Witt, U. (2001). Learning to consume - A theory of wants and the growth of demand. *Journal of Evolutionary Economics*, 11(1):23–36.
- Witt, U. (2010). Economic Behavior-Evolutionary vs. Behavioral Perspectives. *Papers on Economics and Evolution*, 2010(17).
- Witt, U. and Schubert, C. (2010). Extending the informational basis of welfare economics: The case of preference dynamics. *Papers on Economics and Evolution*, 2010(05).
- Zhang, Y. and Shrum, L. (2009). The Influence of Self-Construal on Impulsive Consumption. *The Journal of Consumer Research*, 35(5):838–850.