How psychological distance shapes hedonic consumption: The moderating role of the need to justify

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ABSTRACT

Psychological distance is pervasive in consumers' minds and affects their hedonic consumption patterns. However, the literature regarding the effects of psychological distance on hedonic consumption is inconsistent. Three experiments demonstrate that the need to justify is an important moderator. Experiments 1 and 2 show that when the need to justify is not salient, psychological distance negatively impacts hedonic consumption. However, when the need to justify is salient, the effect of psychological distance disappears statistically. Experiment 3 shows that when the need to justify is not salient, the effect of psychological distance on hedonic consumption is explained by two conflicting mechanisms (i.e., positive emotional intensity and the difficulty in justifying) which respectively represent the indirect negative and positive effect. Nevertheless, when the need to justify is salient, the effect of psychological distance can only be explained by the difficulty in justifying the hedonic option, resulting in an indirect positive effect.

Keywords: psychological distance; construal level theory; cognitive-experiential self-theory; hedonic consumption; need to justify

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1. Introduction

In daily life, consumers experience different situations which are psychologically close or remote to hedonic products (Laran, 2010a; 2010b; Laran, 2020; Maglio, 2020). Consider the example of a pregnant woman who wishes to buy a hedonic diaper bag in order to prepare for the birth of her child in the distant (e.g., 8 months) or near (e.g., 15 days) future or that of a supermarket customer who sees an attractive wireless mouse which is spatially near or far. The consumer is in a similar situation when he or she receives a box of chocolates as a gift or decides to gift a box of chocolates to a friend.

Psychological distance is defined as the subjective experience of being temporally, spatially, socially, or hypothetically near to or far from a stimulus such as a product, person, event, or place (Trope & Liberman, 2010). The consumer feels psychologically close to a product received in two days rather than one month (Liberman & Trope, 1998; Sagristano et al., 2002), to an event that takes place in his or her downtown rather than abroad (Goodman & Malkoc, 2012), to a similar rather than dissimilar person (Liviatan et al., 2008), and to a probable rather than improbable event (Todorov et al., 2007). These different objective distances are formed in consumers' minds as a psychological distance (Bar-Anan et al., 2006; 2007) which is pervasive in their environment (Williams et al., 2014). Hence, psychological distance is an umbrella concept composed of four dimensions (spatial, temporal, social, and hypothetical) which drive consumer preferences, evaluations, and choices through cognitive (Liberman & Trope, 2008) and affective processes (Williams et al., 2014). Also, experiencing psychological closeness or remoteness may impact consumer decisions in several contexts, especially in hedonic consumption (Laran, 2020), such as buying indulgent foods, video games, or products with superior design.

Several research have investigated the effect of psychological distance on consumer responses to hedonic purchases (Chang & Pham, 2013; Keinan & Kivetz, 2008; Laran, 2010a; 2010b). However, examination of the literature demonstrates inconsistent and conflicting results. On the one hand, some research suggests that psychological distance positively impacts hedonic consumption (Kivetz & Simonson, 2002; Kivetz & Keinan, 2006; Keinan & Kivetz, 2008; Laran, 2010b; Lu et al., 2016; O'Curry & Strahilevitz, 2001). Specifically, psychological remoteness promotes consumer responses toward hedonic products. On the other hand, some of the literature shows a negative impact (Chang & Pham, 2013; Hoch & Lowenstein, 1991; Huyghe et al., 2017; Read & van Leeuwen, 1998; Shiv & Fedhorikin, 1999; Soman et al., 2005). In other words, increasing psychological distance decreases consumer attitudes and behavioral consequences toward hedonic products.

To the best of our knowledge, only two research papers have considered the positive and negative effects of temporal distance on hedonic consumption (Laran, 2010a; Nowlis et al., 2004). However, these two studies are specific to temporal distance and do not include an overall explanation to account for other types of distance (i.e., spatial, social, and hypothetical). Moreover, their findings are not specific to hedonic consumption (Nowlis et al., 2004) and focus on underlying cognitive mechanisms only (Laran, 2010a), ignoring affective processes. In order to expand the theory and reconcile the inconsistent results, we suggest examining the conditions and processes by which psychological distance may have positive or negative effects on hedonic consumption.

Based on several works developed within construal level theory (Trope & Liberman, 2010) and cognitive-experiential self-theory (Epstein & Pacini, 1999), we suggest that the extent to which consumers experience the need to justify (not salient vs. salient) when assessing hedonic products constitutes the condition under which psychological distance can positively or negatively impact their responses toward hedonic products.

Three experiments validate our general proposition and show that the need to justify moderates the effect of psychological distance on consumer responses to hedonic products. Experiments 1 and 2 demonstrate that when the need to justify is not salient, consumers have a tendency to develop negative responses (attitudes and choices) to hedonic products when they experience remoteness rather than closeness. However, when the need to justify is salient, the negative effect of psychological distance on hedonic consumption disappears. Experiment 3 examines the underlying mechanism and shows that under the condition of a non-salient need to justify, the effect of psychological distance on hedonic consumption is explained by two conflicting mediators, namely reducing positive emotional intensity and the difficulty in justifying the hedonic option. However, under the condition of a salient need to justify, the positive effect of distance is only explained by a reduction in the difficulty to justify.

The structure of the article is organized as follows. First, we develop our theoretical background and the hypotheses. Second, we present and discuss the three experiments which empirically test our hypotheses. Third, we discuss our theoretical contributions, the implications for managers, limits, and future research.

2. Theoretical background and hypothesis development

2.1 The opposite effects of psychological distance on hedonic consumption

Contrary to utilitarian products, which are important in order to solve daily problems (Strahilevitz & Myers, 1998) or gain a sense of control (Chen et al., 2017), hedonic products are "primarily characterized by an affective and sensory experience of aesthetic or sensual pleasure, fantasy, and fun" (Dhar & Wertenbroch, 2000; p. 61). Hedonic consumption could generate a conflict due to the ambivalent nature of hedonic products (Xu & Schwartz, 2009; Ramanathan & Williams, 2007). They procure pleasure (Alba & Williams, 2013; Huettl &

Gierl, 2012; Klein & Mevlnk, 2016) and generate strong positive emotions such as excitement or delight (Chitturi et al., 2007; 2008; Ramanathan & Williams, 2007) but they remain difficult to justify (Choi et al., 2014; Kivetz & Zheng, 2017) because they are not associated with any specific need. They may also be associated with waste (Lascu, 1991; Prelec & Herrnstein, 1991) as their benefit is difficult to quantify (Okada, 2005), and they are capable of generating strong negative emotions such as guilt or anxiety (Allard & White, 2015; Chitturi et al., 2007; 2008).

Consequently, consumer attitudes and preferences toward hedonic products are unstable (Lu et al., 2016) and may be impacted by several external factors such as promotion (Khan & Dhar, 2010; Kivetz & Zheng, 2017), product presentation (Okada, 2005), "magic price" (Choi et al., 2014), and the psychological distance experienced with these products (Didi Alaoui & Cova, 2021; Laran, 2010a; 2010b; 2020; Maglio, 2020). Psychological distance plays an important role in hedonic consumption because it influences the difficulty in performing cognitive tasks (Thomas & Tsai, 2012), such as justifying the choice of hedonic products, and also impacts affective processes such as the intensity of feeling a positive emotion (i.e., excitement intensity) (Williams et al., 2014).

The concept of psychological distance is defined as the "subjective experience that something is close or far away from the self, here, and now" (Trope et Liberman, 2010; p. 444). Construal level theory posits that psychological distance comprises four dimensions: temporal, spatial, social, and hypothetical. These different dimensions influence consumers' mental construal processes in the same way (Liberman et al., 2007). When consumers experience psychological remoteness, they tend to focus on the abstract, general, and central features of the stimulus. Conversely, when they experience psychological closeness, they tend to focus on concrete, peripheral details and the context-specific features of the stimulus (Liberman & Trope, 2008; Soderberg et al. 2015).

Within marketing literature, a stream of research demonstrates that psychological distance positively influences consumer responses toward hedonic products, particularly through reducing the difficulty in justifying them (Kivetz & Simonson, 2002; O'Curry & Strahilevitz, 2001). More specifically, Thomas and Tsai (2012) demonstrate that increasing psychological distance reduces the subjective experience of difficulty associated with a complex cognitive task. According to Xu and Schwartz (2009), the difficulty in justifying a hedonic product constitutes a complex cognitive task because the consumer has to reconcile conflicting and ambivalent elements such as the pleasure and guilt associated with hedonic consumption.

Hence, experiencing psychological distance leads the consumer to adopt abstract thinking which renders contradictory thought (i.e., pleasure and guilt) more coherent and less conflicting (Hong & Lee, 2010). This conjecture converges with the theoretical explanation proposed by Kivetz and Simonson (2002) that when psychological distance is large the consumer encounters less difficulty in justifying an alternative perceived as irrational and anticipates less guilt associated with hedonic consumption (Keinan & Kivetz, 2008; Kivetz & Keinan, 2006; Lu et al., 2016; Park & Kim, 2012). Empirically, O'Curry and Strahilevitz (2001) show that when the probability of winning a lottery is low (i.e., experiencing a large psychological distance), consumers prefer to choose a hedonic prize because there is low probability that they will have to experience the guilt associated with the hedonic alternative.

However, a second stream of research advances that increasing psychological distance may negatively affect the consumption of hedonic products (Chang & Pham, 2013; Hoch & Lowenstein, 1991; Huyghe et al., 2017; Read & van Leeuwen, 1998; Shiv & Fedhorikin, 1999; Soman et al., 2005). One explanation is that this negative effect could be attributed to the positive emotional intensity which decreases when psychological distance increases (Septianto & Pratiwi, 2016; Williams et al., 2014). In fact, when consumers experience a large

psychological distance, such as consuming the hedonic product in the future, they experience less positive intense emotion (Williams et al. 2014) which drives the evaluation of hedonic products (Kim et al. 2010), intention to buy (Kumar et al. 2009), satisfaction (Aurier & Guintcheva, 2014 ; Phillips & Baumgarter, 2002), loyalty (Lee et al., 2008 ; Chang et al., 2014; Walsh et al., 2011), and positive word of mouth (Chitturi et al., 2008; Ladhari, 2007; Jang & Namkung, 2009).

These opposite effects and contradictory mechanisms lead us to understand the conditions and processes by which psychological distance may have positive or negative effects on consumer responses to hedonic products. In the next section, we develop the concept of need to justify, which may explain under which conditions psychological distance increases or decreases hedonic consumption.

2.2. The moderating role of the need to justify

In a consumption context, people may sometimes need to justify their responses to a product (Shafir et al., 1993; Simonson, 1989; Simonson and Nowlis, 2000; Tezer et Sobol, 2021; Xu and Schwarz, 2009). The need to justify is defined as a state in which consumers have to give reasons that explain their attitudes, choices, and decisions toward a product (Simonson, 1989).

According to Simonson (1989), the extent to which the need to justify may be salient or not salient depends on internal factors such as the desire to increase self-esteem (Hall & Lindzey, 1978), anticipated choice regret (Bell, 1982), cognitive dissonance (Festinger, 1957), and the belief that human beings are rational and have reasons to prefer one option over another (Abelson, 1964). It may also depend on external factors such as anticipating the evaluation and judgment of others (Hong & Chang, 2015; Simonson, 1989; Simonson & Nowlis, 2000), the presence of a family member (Luo, 2005), being observed by someone during the preference construction stage (Zwebner & Schrift, 2020), or when they are

assessing an alternative in a joint or separate context (Okada, 2005). Hence, these internal and external factors may lead consumers to justify or not justify the choice of product to themselves (self-justification) or to another person such as a family member.

When the need to justify is not salient, consumer choices are not necessarily based on reasons or logical explanations. However, when the need to justify is salient, the explanations and reasons that drive consumer behavior become important and essential (Shafir et al., 1993; Simonson & Nowlis, 2000).

In psychology and marketing, several authors suggest that consumer behavior is typically driven by rational and affective systems that operate in parallel and could interact (Chang & Pham, 2013; Epstein & Pacini, 1999; Lee et al., 2015; Metcalfe & Mischel, 1999; Shiv & Fedorikhin, 1999; Strack & Deutsch, 2004). According to cognitive-experiential self-theory (CEST) (Epstein, 1973; 1991; 1994; Epstein & Pacini, 1999), a person automatically activates the affective (or experiential) system that is based on feelings, affect, and sensorial connections. In parallel, the individual may activate the rational system based on reason which requires justification via logic and evidence (Epstein, 1994).

Using CEST, we suggest that psychological distance may have a positive or negative effect on hedonic consumption depending on the extent to which the need to justify is dominant. When the need to justify is not salient, it is probable that consumers, by default, automatically activate the affective system that does not require reasoning, deliberation, or justification. Under this condition, we suggest that the effect of psychological distance on consumer responses to hedonic products is negative because it would be explained by an affective mechanism such as reducing positive emotional intensity. More specifically, when consumers do not experience the need to justify a hedonic choice such as consuming a delicious chocolate, then increasing the psychological distance with the hedonic product (e.g., consuming the chocolate later rather than now) will decrease their responses toward this

product.

However, when the need to justify is salient, it is likely that consumers activate the rational system that requires justification through logic and evidence. Under this condition, we suggest that the effect of psychological distance would be positive, because it would be explained by cognitive mechanisms such as reducing the difficulty in justifying responses to hedonic products. Specifically, if consumers experience the need to justify a hedonic choice and the psychological distance is great, then they will have a positive response toward the product.

Therefore, we suggest that:

H1: The effect of psychological distance on consumer responses to hedonic products is moderated by the extent to which the need to justify is dominant. When the need to justify is non-salient (vs. salient), psychological distance will have a negative (positive) effect on consumer responses to hedonic products.

According to Williams et al. (2014) increasing psychological distance reduces the intensity of positive emotions. Indeed, objects that are psychologically remote tend to affect people less than those that are psychologically close (Williams et al., 2014; McGraw et al., 2012). Under the non-salient need to justify condition, consumer behavior is expected to be driven by the affective mechanism. Thus, we predict that under this condition the effect of psychological distance on consumer responses to hedonic products will be negatively mediated by reducing positive emotional intensity. In other words, under the non-salient need to justify condition, increasing psychological distance will reduce the positive emotional intensity of consumers (e.g., the intensity of positive excitement toward the product), which subsequently decreases their responses to hedonic consumption.

Hence, we expect that:

H2a: When the need to justify is not salient, the effect of psychological distance on consumer responses to hedonic products will be negatively mediated by reducing positive emotional intensity.

The difficulty in justifying hedonic products is a complex cognitive process because it requires the reconciliation of conflicting and ambivalent elements such as pleasure and guilt (Xu & Schwartz, 2009). When consumers experience psychological remoteness (vs. closeness), they tend to have less (more) difficulty in performing complex cognitive tasks (Thomas & Tsai, 2012) because they think more abstractly (concretely) (Cho et al., 2013; Xu et al., 2013), making elements less (more) conflictual (Hong & Lee, 2010). As CEST predicts, under the salient need to justify condition it is likely that consumers will activate rational decision-making and the effect of psychological distance will be explained by a cognitive mechanism. Thus, we hypothesize that under this condition, the effect of distance on hedonic consumption will be positively mediated by reducing the difficulty in justifying the responses to hedonic products. More specifically, when the need to justify is salient, increasing psychological distance will promote consumers responses to hedonic products because they will experience less difficulty in justifying the hedonic choice.

Therefore, we suggest that:

H2b: When the need to justify is salient, the effect of psychological distance on consumer responses to hedonic products will be positively mediated by reducing the difficulty in justifying their view of these products.

Figure 1 depicts the conceptual model of the opposite effects of psychological distance on consumers responses toward hedonic products.

Insert Figure 1 here

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3. Methodology

We test our hypotheses through three experiments that use different manipulations of psychological distance (temporal, spatial, and social), the need to justify (related and not related to the focal task), product categories (diaper bag, computer mouse, chocolate), samples (consumers, panel, students), and dependent variables (attitude and choice). Experiment 1 tests H1 through operationalizing temporal distance and manipulating the need to justify. In this experiment in a real-life setting, we ask consumers expecting babies to express their attitudes toward a hedonic diaper bag contrasted with a utilitarian one. Experiment 2 also tests H1 by manipulating spatial distance and the need to justify through the use of another product category: a computer mouse. Finally, experiment 3 tests H2a and H2b with a new manipulation of social distance, the need to justify, and a new product category: chocolate.

3.1 Experiment 1

The purpose of this experiment is to test the moderating role of the need to justify on the relationship between psychological distance and hedonic consumption (i.e., H1). We conducted this study with expectant parents who had a temporal distance with the birth of their child. In this experiment, expectant parents had to imagine that they wanted to buy a diaper bag a few days before the birth.

3.1.1 Procedure and measures

The experiment involved the participation of 196 expectant parents. In order to negate any effect due to prior brand knowledge or brand attitude (Keller, 2003; 2016), we removed 8 participants from the sample who were familiar with brand Peg Perrégo, whose product was presented in the experiment. The final sample therefore comprised 188 respondents (Female = 177; M_{age} = 29.17, SD = 4.66). Expectant parents participated in the experiment featuring a 2

(temporal distance: closeness vs. remoteness to the child's birth) × 2 (need to justify: non-salient vs. salient) between-subject design.

The first factor was operationalized by asking each participant how many months into the pregnancy they were. Then, we split this variable at the median in order to create two balanced conditions. The close temporal condition was composed of expectant parents where the mothers were 7 months pregnant or more, while the remote temporal condition was formed by expectant parents where the mother was between 1 and 6½ months pregnant. Although the dichotomization of a variable could increase the risk of error types I and II (Fitzsimons, 2008; McClelland et al., 2015; Rucker et al., 2015), there is no problem in dichotomizing when the independent variable and the moderator are not correlated (Iacobucci et al., 2015a; 2015b). In our case, the correlation between the independent variable (i.e., temporal distance) and the moderator (i.e., the need to justify) is not significant (r = -0.035; p = .631) suggesting that dichotomization is possible.

The need to justify factor was manipulated through a procedure unrelated to the focal task that was first suggested by Khan and Dhar (2006) and later enhanced by Sela, Berger and Liu (2009; experiment 4). This manipulation suggests that when people carry out virtuous actions (e.g., working as a volunteer for an organization), this leads to the activation of a positive self-concept which decreases the justification and negative self-attribution associated with the hedonic product (Khan and Dhar, 2006). In contrast, when people imagine themselves performing a licensing activity, such as having fun by engaging in leisure activity for three hours per week, this leads them to justify their position more in subsequent tasks (Sela et al., 2009). In our experiment, half of the participants were randomly allocated to the non-salient need to justify condition and the other half to the salient need to justify condition. Under the former condition, participants were asked to imagine that they had volunteered to spend three hours a week doing a community service. Then, they had to choose between two

virtuous activities— “playing with children in a homeless shelter” or “acting for the environment by cleaning the streets of their city”—and explain their choice. Under the salient need to justify condition, participants were asked to imagine that they would be spending three hours a week doing a fun activity. Then, they had to choose between two fun activities— “relaxing in a spa” or “relaxing while shopping”—and explain their choice.

After the manipulation of the need to justify, participants were asked to imagine that they were looking for a diaper bag before the birth of their baby. We presented them with a focal hedonic diaper bag contrasted with a utilitarian one (see Appendix A). Afterward, participants expressed their attitude toward each product (Broniarczyk & Alba, 1994; $\alpha_{hedonic\_bag} = .87$)[1]. For a manipulation check, we asked them to evaluate their experience of the temporal distance with their child’s birth (mono-item scale: For me, the birth of my child is 1 = very close / 7 = very far) and the hedonic aspect of the focal bag (Roggeveen et al., 2015). Finally, in order to rule out the potential effect of mood (see Williams et al., 2014), we included a mood scale ($\alpha = .94$) adapted from Ashraf and Thongpapani (2015). Details of the scales and their items are presented in Table 1. After completing all the scales, the participants provided demographic information and were thanked.

Insert Table 1 here

3.1.2 Results and discussion

The first manipulation-check results reveal that participants under a close temporal condition perceived their child’s birth as closer than participants under a remote temporal condition ($M_{close} = 2.11$; $SD = 1.23$ vs. $M_{remote} = 3.79$; $SD = 1.47$; $t\ (168.63) = -8.371$, $p < .001$). For hedonic/utilitarian manipulation, an analysis of variance (ANOVA) with repeated measures reveals that the hedonic diaper bag ($M_{hedonic} = 71.42$; $SD = 26.48$) was perceived as more hedonic than the utilitarian diaper bag ($M_{utilitarian} = 27.16$; $SD = 28.41$; $F\ (1, 187) =$

180.713, $p < .001$, $\eta^2_p = .491$). For mood as the confounding variable the results of one-way ANOVAs suggest that neither temporal distance (F (1, 186) = 3.794, $p = .053$) nor the need to justify (F (1, 186) = 3.370, $p = .068$) had a significant effect on participants' mood, thus ruling out the effect of this variable.

Looking at the main results, a two-way ANOVA reveals that there was no significant direct effect of temporal distance (F (1, 184) = .263, $p = .698$) or the need to justify (F (1, 184) = .132, $p = .778$) on attitude toward the focal hedonic diaper bag. However, the results suggest a significant interaction effect between temporal distance and the need to justify on attitude toward hedonic diaper bag (F (1, 184) = 4.647, $p = .032$, $\eta^2_p = .025$). More specifically, planned contrasts suggest that under a non-salient need to justify condition, expectant parents who were close to the birth of their child had a more positive attitude toward hedonic diaper bag ($M_{close} = 3.39$; $SD = 1.83$, $n = 51$) than expectant parents who were more distant from the birth ($M_{remote} = 2.63$; $SD = 1.47$, $n = 47$; t (94.24) = 2.272, $p = .025$). Conversely, under a salient need to justify condition, the results suggest that there is no significant difference. Participants close to the birth approximatively had the same attitude toward hedonic diaper bag ($M_{close} = 2.71$; $SD = 1.56$, $n = 50$) than those distant from the birth ($M_{remote} = 2.95$; $SD = 1.41$, $n = 40$; t (86.76) = -.779, $p = .438$).

These first results support H1 which predicts the moderating role of the need to justify. Specifically, under the non-salient need to justify condition, psychological distance has a significant negative effect on consumer attitude toward hedonic products. However, under the salient need to justify condition, this effect disappears.

3.2 Experiment 2

In order to replicate the results of experiment 1, we ran a new experiment using another dimension of psychological distance, namely the spatial dimension, along with a new

manipulation of the need to justify. We also used a new product category, choosing a hedonic computer mouse for our experimental material, and contrasting it with a utilitarian one.

3.2.1 Procedure and measures

Experiment 2 involved 277 participants (Female = 155; M_{age} = 37.59, SD = 12.07) from a French crowdsourcing platform Foule Factory, who were randomly allocated to one of four conditions of 2 (spatial distance: close vs. remote) × 2 (need to justify: not salient vs. salient) between-subject factorial design. In order to operationalize spatial distance, we adapted a manipulation from Huang et al. (2017) who suggest that presenting a product's picture from a distant or close perspective induces a perceptual spatial remoteness or proximity (see Appendix B).

The need to justify factor was manipulated through a procedure unrelated to the focal task suggested by Sela et al. (2009; experiment 5). Under this procedure, the degree of prominence of the need to justify was manipulated by varying participants' perceived effort. According to Kivetz and Zheng (2006), when people perceive that they have expended a high (vs. low) degree of effort, this leads them to justify their position less (more) and indulge more (less). In our experiment, we manipulated participants' effort by asking them to solve simple mathematical problems (e.g., identifying the next integer in the numerical series 1, 2, 4, 7, 11, 16, …). Participants under the non-salient need to justify condition were informed that, from a possible 2 to 10 problems, the software had randomly assigned them 9 problems to solve. In contrast, participants under the salient need to justify condition were told that, from a possible 8 to 18 problems, the software had randomly assigned them 9 problems to solve. This procedure tends to reduce or reinforce the need to justify through the effort that the participants think they are making. Those under the non-salient (vs. salient) need to justify condition believe that they put in more (less) effort than other participants by being randomly assigned 9 out of 10 (18) problems to solve.

After the unrelated effort task, participants were asked to imagine that they were looking for a new computer mouse and that they had found two different types in a supermarket: one presenting as hedonic and the other as utilitarian. Participants then had to choose between these two products. In order to reflect a real-choice set, they also had the option of no choice (Jedidi & Zhang, 2002; Jongmans & Jolibert, 2017). We included a manipulation check of spatial distance (mono-item scale: The computer mouse seemed 1 = very close / 7 = very remote), the need to justify (mono-item scale: During my choice, I experienced the need to justify my decision-making 1 = not at all / 7 = totally), and the perceived hedonic aspect of the focal computer mouse (Roggeveen et al., 2015). Finally, in order to rule out the potential effect of implication during the task (see Goodman & Malkoc, 2012), we included the implication scale (α = .83). As in experiment 1, we also included the mood scale (α =.93) in order to rule out the potential effects of mood (see Table 1 for details of scales). At the end of the study, participants provided demographic information and were thanked.

3.2.2 Results and discussion

First, the manipulation check of spatial distance reveals that participants under a close spatial condition perceived the computer mouse as closer than participants under a remote spatial condition (M_{close} = 3.64; *SD* = 1.26 vs. M_{remote} = 5.06; *SD* = 1.70; *t* (267.342) = -7.923, $p < .001$). The manipulation check of the need to justify suggests that participants with a salient need to justify reported more feelings about the need to justify than those under a non-salient need to justify condition ($M_{salient}$ = 3.67; *SD* = 1.84 vs. $M_{not\_salient}$ = 3.15; *SD* = 1.66; *t* (275) = -2.465, $p < .014$). These results suggest that the manipulations of spatial distance and the need to justify were successful. The results of repeated ANOVA for the hedonic/utilitarian manipulation of computer mice suggest that the hedonic mouse was perceived as more hedonic ($M_{hedonic\_mouse}$ = 64.58; *SD* = 24.52) than the utilitarian model ($M_{utilitarian\_mouse}$ = 24.94;

SD = 22.32; F (1, 276) = 379.528, $p < 0.001$, $\eta^2_p = 0.579$).

Furthermore, the ANOVA results suggest that neither spatial distance (F (1, 275) = .221, p = .63) nor the need to justify (F (1, 275) = .15, p = .69) had an effect on participants' involvement in the task. We found the same pattern for participants' mood through ANOVA which suggests that neither spatial distance (F (1, 275) = 2.805, p = .095) nor the need to justify (F (1, 275) = .000, p = .996) had an effect on participants' mood. So, we can rule out the potential effect of these two variables.

Concerning the main effects, a binary logistic regression shows that spatial distance (β = -2.350, Wald χ^2 (1) = 5.146, p = 0.023) and the need to justify (β = -2.309, Wald χ2 (1) = 4.749, p = .029) affected the choice of the hedonic computer mouse. Moreover, the results reveal that there was a significant interaction effect between spatial distance and the need to justify (β = 1.427, Wald χ^2 (1) = 4.564, p = .033) when choosing the hedonic computer mouse. The results suggest that in the non-salient position spatial distance has a significant negative effect on the choice of the hedonic computer mouse (β = -0.924, Wald χ2 (1) = 4.079, p = .043) (see table 2). Indeed, the percentage of hedonic computer mouse choice decreased from 25% for participants in spatial proximity (n = 64) to 11.7% for those who were spatially remote (n = 77). Conversely, under the salient condition, this effect disappears (β = 0.503, Wald χ^2 (1) = 1.068, p = 0.301) and we observe that the percentage of hedonic computer mouse choice increases from 12.1% for respondents under the spatial proximity condition (n = 66) to 18.6% for those under the spatial remoteness condition (n = 70).

Insert Table 2 here

The results of experiment 2 again support H1 which suggests a moderating role of the need to justify and converges with the results of experiment 1. Specifically, under the non-salient need to justify condition, psychological distance has a significant negative effect on

consumer choice toward hedonic products. However, under the salient need to justify condition, this effect disappears.

In experiments 1 and 2, we show that psychological distance has a significant negative effect on hedonic consumption only when the need to justify is non-salient and that this effect disappears when the need to justify is salient. We cannot demonstrate the significant positive effect of psychological distance on hedonic consumption under the salient need to justify condition. However, according to Zhao, Lynch, and Chen (2010), when the direct effect is not significant, this does not necessarily mean a complete absence of effect that can be totally mediated by a third variable. Hence, it is important to investigate the underlying mechanisms that could explain the moderated effect of psychological distance on consumer response to hedonic products. However, these two experiments compare a hedonic product with a utilitarian one. This condition could introduce a bias because consumers could use the need to justify when jointly assessing a product (see Okada, 2005). Last, our initial results are based on temporal and spatial distance without evidence from other kinds of distance, such as social one. Therefore, to resolve the various limitations of experiments 1 and 2, we conducted a new experiment.

3.3 Experiment 3

In this experiment, we test the underlying mechanisms of the effect of psychological distance on consumer response toward hedonic products depending on the degree of prominence of the need to justify (i.e., H2a and H2b). We used a box of chocolates as a new totally hedonic product (see Kivetz & Simonson, 2002a; Laran, 2010b; Mehta et al., 2014; Roogeveen et al., 2015), introduced another dimension of psychological distance, i.e., social one (Trope & Liberman, 2010) and used a new manipulation of need to justify (Simonson, 1989).

3.3.1 Procedure and measures

Experiment 3 involved 200 students from a large university in France (Female = 116; M_{age} = 20.41, SD = 1.765). The participants were randomly allocated to one of four conditions of 2 (social distance: close vs. remote) × 2 (need to justify: not salient vs. salient) between-subject factorial design. Social distance was manipulated through the gift giver-receiver manipulation of Baskin et al. (2014). First, all participants were asked to think about a particular friend and note his or her initials. Second, participants under the social closeness condition were invited to imagine that they would receive a box of chocolates as a gift from this friend, while those under the social remoteness condition were asked to imagine that they would offer this friend a box of chocolates as a gift. The gift giver-receiver manipulation transcribes a valid cue of social distance because the giver tends to focus more on the receiver to ensure that the gift will surprise, delight, and be relevant. Also, the giver tends to imagine the gift in the receiver's hands, thus creating a remoteness perspective and high psychological distance from the gift. In contrast, receivers tend to focus on themselves when they receive a gift because they will consume and enjoy it. Hence, the receiver tends to take an egocentric and proximal perspective toward the gift (Baskin et al., 2014).

The need to justify factor was manipulated through the procedure of Simonson (1989). More specifically, participants under the salient need to justify condition had to anticipate the regret of their choice and justify it by noting at least two reasons to explain their choice. Those under the non-salient condition did not have to anticipate their regret or justify their choice.

After reading through the scenario of one of the four experimental conditions, participants were asked to choose between five different chocolate boxes (see Appendix C). They then had to evaluate their emotional intensity using a mono-scale from Chitturi et al. (2008) and their difficulty in justifying their choice using a 5-items scale (α = .597) adapted from Thomas and Tsai (2012). We included a manipulation check of social distance (α = .79),

need to justify (α = .59), and the perceived hedonic aspect of the chocolate product as well as each chocolate box. As in experiment 2, we added scales of implication (α = .73) and mood (α = .89) in order to rule out their potential confounding effects. We also included a mono-item scale of level of hunger as a potential confounding factor (see Cornil & Chandon, 2016) (see Table 1 for details of scales). At the end of the experiment, participants answered demographic questions and were thanked.

3.3.2 Results and discussion

First, the result of the manipulation check for social distance reveals that participants under the socially remote condition perceived that the choice was made more for other people than for the participants under the socially close condition ($M_{remoteness}$ = 6.01; *SD* = 1.10 vs. $M_{closeness}$ = 2.22; *SD* = 1.38; *t* (194.792) = - 21.182, $p < .001$). The results for the manipulation check of the need to justify suggest that participants under the salient need to justify condition were more conducive to justifying their choice than those under the non-salient condition ($M_{salient}$ = 5.30; *SD* = 1.23 vs. $M_{not\_salient}$ = 4.46; *SD* = 1.64; *t* (192.98) = -4.108, $p < .001$). Concerning the perceived hedonic aspect of the chocolate product, a one sample t-test reveals that participants perceived the chocolate box product as more hedonic than utilitarian ($M_{perceived\_hedonic\_value}$ = 5.95; *SD* = 1.24; *t* (199) = 22.11, $p < .001$). In fact, the mean tends toward the 7-point scale (totally hedonic) rather than the 1-point scale (totally utilitarian) and remains significantly greater than the midpoint 4. The participants also rated the hedonic value of each chocolate box and the results of a repeated ANOVA showed the significant effect of increasing the size of the chocolate box on its hedonic perception (*F* (1, 457) = 9.935; $p < .001$). Hence, this sum of evidence demonstrates that our dependent variable is a good indicator of hedonic consumption. For the confounding check, the results suggest that neither implication (*F* (1, 198) = .145; *p* = .704) nor mood (F (1, 198) = 0.005; *p* = .941) were

influenced by social distance. The results also reveal that the need to justify had no influence on implication (F (1, 198) = .897; p = .345) or mood (F (1, 198) = 1.075; p = .301). Finally, participants' level of hunger had no significant influence on the choice of box of chocolates (β = .131; t (198) = 1.856; p = .065). Hence, these results demonstrate that implication, mood, and level of hunger have no influence in our relationships.

In order to analyze hypotheses H2a and H2b, we ran a moderated mediation analysis through the PROCESS macro (Hayes 2013). We selected model 7 with a 5000-sample bootstrap and 95% confidence intervals. The first results suggest that neither social distance (β = -.049, t (194) = -.738, p = .461, 95%; [CI = -.1822 to .0829]) nor the need to justify (β = -.027, t (194) = -.422, p = .673, 95%; [CI = -.1557 to .1008]) had a significant effect on the choice of box. However, the results show a significant effect of their interaction on the choice of box (β = .1313, t (194) = 2.003, p < .05; 95%; [CI = .0021 to .2604]).

Moreover, the results confirm that emotional intensity (β = .1627, t (194) = 3.799, p < .001, 95%; [CI = .0782 to .2471]) and the difficulty to justify (β = -.5125, t (194) = -7.868, p < .001, 95%; [CI = -.6410 to -.3841]) both had a significant effect on the choice of the box of chocolates.

The results for the first hypothesis of moderated mediation (i.e., H2a) suggest that when the need to justify is not salient, the indirect effect of social distance on the choice of box by reducing emotional intensity is significant (β = -.063, 95%; [CI = -.1480 to -.0158]). However, under the non-salient condition, the indirect effect of social distance through the difficulty to justify is also significant (β = .128, 95%; [CI = .0317 to .2397]). Hence, we partially accept H2a.

For the second hypothesis of moderated mediation (i.e., H2b), the analysis shows that under the salient condition social distance has a significant indirect effect on choice *via* the difficulty to justify (β = .127, 95%; [CI = .0255 to .2539]). The results show that under this

condition, social distance does not have a significant indirect effect on choice through emotional intensity (β = .0134, 95%; [*CI* = -.0356 to .0809]). Hence, we accept H2b.

Again, this experiment confirms the moderating role of the need to justify. The results show that when the need to justify is not salient, the effect of psychological distance on consumer choice is explained simultaneously by positive emotional intensity and the difficulty to justify. However, when the need to justify is salient, the effect of psychological distance is only explained by the difficulty to justify, and the mediating effect of emotional intensity disappears.

Even if these results only partially confirm cognitive-experiential self-theory, a number of conclusions can be drawn. First, the results show that psychological distance may have opposite effects through two different mechanisms (positive emotional intensity and difficulty to justify). Second, they suggest under which conditions these underlying mechanisms are activated or not. Third, although we did not demonstrate a positive direct effect under the salient need to justify condition in experiments 1 and 2, we have empirical evidence that a salient need to justify enables the positive indirect effect of psychological distance on choice of hedonic products, through a reduction in the difficulty of justifying this choice.

4. General discussion

This research explains when and how psychological distance enhances or reduces consumer responses to hedonic products. The marketing literature presents some inconsistencies in that one stream of research suggests that increasing psychological distance reduces hedonic consumption, while another branch of the literature concludes that psychological distance has a positive effect on consumer responses toward hedonic products. Our research attempts to reconcile these contradictions by demonstrating that the need to justify explains whether psychological distance has a negative or positive effect on hedonic

consumption.

Experiments 1 and 2 suggest that when the need to justify is not salient, then psychological distance has a significant negative effect on consumer responses to hedonic products. Under the salient need to justify condition, this effect disappears. Experiment 3 demonstrates again the moderating role of the need to justify and provides more details regarding its underlying mechanisms. More specifically, when the need to justify is not salient, the effect of psychological distance on consumer responses to hedonic products is driven jointly by positive emotional intensity and the difficulty in justifying the response to hedonic products. However, when the need to justify is salient, the effect of psychological distance can only be explained by the difficulty in justifying the response to hedonic products. Our results are robust because we tested our model through different manipulations of psychological distance and the need to justify by using various product categories and samples. Moreover, our research offers a variety of implications for theory and practice and opens new avenues for future research.

4.1 Theoretical contributions

Our research makes several theoretical contributions mostly related to construal level theory. We reconcile mixed results on the effects of psychological distance on hedonic consumption. Our research suggests a new moderator (i.e., the need to justify), which indicates when psychological distance may have a positive or negative impact on consumer responses to hedonic products. However, we advocate two opposite mechanisms which respectively explain the positive (i.e., reducing the difficulty in justifying hedonic products) and the negative (i.e., reducing the positive emotional intensity) mediated effects of psychological distance on hedonic consumption.

Theoretically, our research amplifies the work of Laran (2010a) and Nowlis et al. (2004) who suggest under which conditions temporal distance could have a positive or

negative impact on consumer response toward hedonic products. However, their research has several limits that our study addresses.

First, Laran (2010a) explains that the effect of temporal distance on hedonic consumption depends on the inhibition vs. activation of self-control information vs. indulgent information. When the indulgent information is active, decisions that take place in the future tend to be oriented toward self-control and hedonic consumption is reduced. However, when the self-control information is active and the decision pertains to the future, the consumer tends to incline toward the hedonic product. In other words, increasing temporal distance tends to inhibit the active information and leads to the activation of the concurrent information. Despite the merits of this theorization, Laran's work (2010a) focuses on cognitive process only and does not explain why the inhibition of the active information will necessarily lead to the activation of the concurrent information. Also, the author does not explain through which process increasing temporal distance inhibits the active information. Moreover, this research contradicts the work of Fujita and Carnevale (2012) and Fujita et al. (2006) who suggest that when psychological distance impacts the construal level of consumers, thus activating high-level construal, it enhances consumer self-control. Enhancing self-control reduces consumer responses to hedonic products. Our research adds to Laran's work by suggesting a new moderator (i.e., the need to justify) and two distinct cognitive and affective mechanisms (i.e., reducing the difficulty in justifying hedonic products and reducing positive emotional intensity) which explain how psychological distance enhances or reduces hedonic consumption depending on the need to justify.

Second, our research adds to the work of Nowlis et al. (2004) who suggest an explanation specific to temporal distance (i.e., pleasure/displeasure related to delay) and less relevant to other kinds of distance. Moreover, Nowlis et al. (2004) propose a general moderator (i.e., whether the consumption is real or hypothetical) which could apply to

different kinds of consumption (e.g., utilitarian consumption) and which is not specific to hedonic consumption. Our research provides a moderator and explanation that are relevant for different dimensions of psychological distance and that are specific to hedonic consumption, such as the difficulty to justify (Okada, 2005) and positive emotional intensity (Holbrook and Hirschman, 1982).

Furthermore, our research contributes to broadening the vision of construal level theory, which focuses on the cognitive mechanism only (Dhar & Kim, 2007), thus deviating from dual process theories which suggest that behavior is driven by cognitive and affective mechanisms (Epstein & Pacini, 1999; Chaiken & Trope, 1999; Kahneman, 2003; Strack & Deutsch, 2004). We conceptualize the effect of psychological distance through two mechanisms, cognitive (reduction in the difficulty to justify) (Thomas & Tsai, 2012) and affective (reducing emotional intensity) (Williams et al., 2014), which are supported by CEST (Epstein & Pacini,1999).

4.2 Practical implications

The managerial implications of this work could be beneficial for companies by enhancing their ability to sell hedonic products or for social organizations that help consumers to reduce their consumption of hedonic products that are perceived as detrimental for health or financial reasons.

Companies that sell hedonic products, such as Nutella®, M&M's®, Pepsi®, Chanel®, and Apple®, may enhance or reduce their consumers' need to justify depending on the psychological distance experienced by their customers. For example, if consumers experience physical proximity to a hedonic product in the store, companies could reduce their need to justify in order to preserve the positive emotional intensity that will drive the responses toward hedonic products. To do so, retailers could present the product by itself in a corner of the store or alongside another hedonic product perceived as more guilt-provoking than the

target product. Companies may also use specific taglines in their advertising to reduce the need to justify, such as “We will grow up later” (Haribo®).

In contrast, if consumers experience physical remoteness with a product (e.g., an online website), companies could enhance the need to justify in order to benefit from the indirect positive effect, due to a reduction in the difficulty to justify. In this case, companies could place the hedonic target product next to a utilitarian one in order to highlight the need to justify (see Okada, 2005). Also, in their advertising campaigns, companies selling hedonic products could enhance the need to justify when psychological distance increases through communications such as “Do you always need a good reason for a pleasure moment with chocolate?” This strategy will be beneficial in a psychological remoteness context because the consumer will easily find reasons to justify hedonic consumption.

For social organizations and public authorities that try to help consumers to reduce their consumption of hedonic products, our research suggests increasing (vs. decreasing) the need to justify when the consumer experiences psychological proximity (remoteness). In fact, when the consumer is psychologically close to the hedonic product, the strategy is to strengthen that consumer’s need to justify. For example, the French National Nutrition and Health Program uses taglines such as “For your health, avoid eating too fatty, too sweet, too salty, *manger bouger*” in order to signal important elements that people need to consider before consuming indulgent products. Also, using front-of-pack nutritional labels such as “Nutri-score” (see Dubois et al., 2020) may enhance the need to justify when the consumer encounters a hedonic product with a bad score. Hence, using “Nutri-score” when the consumer experiences psychological proximity undermines positive emotional intensity and consequently reduces responses toward hedonic products. In contrast, using the “Nutri-score” label in a psychological remoteness context, such as in television advertising or on the

Internet, may be counterproductive because the consumer will experience less difficulty in justifying and could be more inclined to buy the hedonic choice.

4.3 Limitations and future research

Despite making several contributions, our research has some limits and therefore presents opportunities for future research. First, we conceptualize psychological distance through three dimensions, i.e., temporal, spatial, and social, without providing empirical evidence of the hypothetical dimension. Hence, it would be interesting to investigate if the same effects hold for hypothetical distance, such as the probability of winning a hedonic product (see for example: O'Curry & Strahilevitz, 2001).

Second, we focused on a single distance dimension only, without investigating the effect of multiple distances which could boost consumers' cognitive responses (Huang et al., 2016) as well as their affective responses, such as positive emotional intensity. Hence, it would be interesting to investigate if our predictions hold or are nuanced in the case of multiple distances (i.e., experiencing both temporal and spatial distance).

Third, our manipulations for the need to justify were not related to marketing tools that could be directly implemented by managers. It would be relevant to replicate our results by manipulating the need to justify through working tools such as taglines or "Nutri-score".

Fourth, our research focuses on products only and does not include hedonic services such as spa treatments and high-end gastronomy. We think that our model could be applied to services and we would predict similar results, but future research could provide empirical evidence for such intangible offers.

Footnotes

1. As our hypotheses focus on hedonic product, we report here the results related to the hedonic product exclusively and not those related to the utilitarian one. The utilitarian product was only used in order to enhance the perception of the hedonic aspect of the focal diaper bag.

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Tables

Table 1. Measures across the three experiments

Construct	Scale	Item(s)	Adapted measures
Experiment 1			
Dependent variable Attitude toward the product ($\alpha_{hedonic\_bag}$ = .87)	Three items; seven-point Likert-type (1 = not at all / 7 = very much)	I like the diaper bag A I appreciate the diaper bag A I have a favorable opinion about the diaper bag A	Broniarczyk and Alba, 1994
Manipulation check 1: Temporal distance	Mono-item scale Seven-point Likert-type (1 = very close / 7 = very far)	Think about the event "the birth of your child". Do you have the impression that this event is close or far away?	Trope and Liberman, 2000
Manipulation check 2: Hedonic aspect of the focal bag	Mono-item scale 101 points (0 = totally utilitarian / 100 = totally hedonic)	Participants read the definitions of hedonic and utilitarian products and rate each bag on a 101-point scale	Roggeveen et al., 2015
Confounding check: Mood (α = .94)	Three items; seven-point semantic differential	Bad/good Negative/positive Unhappy/happy	Ashraf and Thongpapani, 2015
Experiment 2			
Dependent variable Choice between mice	Discrete choice: Computer mouse A; Computer mouse B; Neither of them	I want to buy it: Computer mouse A; Computer mouse B; Neither of them	Jongmans and Jolibert, 2017
Manipulation check 1: Spatial distance	Mono-item scale Seven-point Likert-type (1 = very close / 7 = very far)	The computer mouse seemed: 1 = very close / 7 very far away	Huang et al. (2017)
Manipulation check 2: Need to justify	Mono-item scale Seven-point Likert-type (1 = not at all / 7 = totally)	When making my choice, I test the need to justify my decision-making: 1 = not at all / 7 = completely	Own measure
Manipulation check 3: Hedonic aspect of the focal computer mouse	Same as study 1		
Confounding check: 1: Mood (α = .93)	Same as study 1		
Confounding check 2: Involvement during the task (α = .83)	Two items; seven-point Likert-type	"How much effort did you put into the choice?" 1 = low effort / 7 = high effort "How much thought did you give to this decision?" 1 = not all / 7 = very much	Goodman and Malkoc (2012)
Experiment 3			
Dependent variable Choice between boxes of chocolates	Discrete choice: Box 1; Box 2; Box 3; Box 4; Box 5	I would like to receive/offer the: Box 1;	Cornil and Chandon, 2016

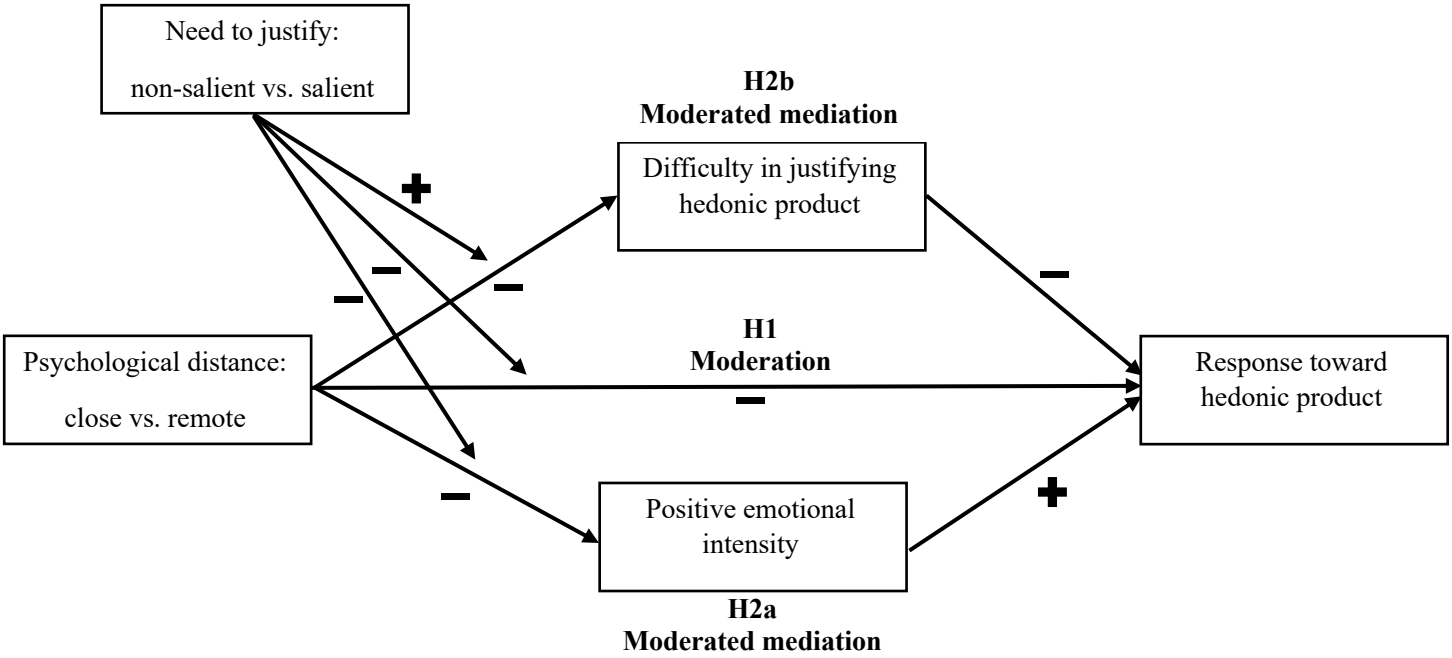
		Box 2; Box 3; Box 4; Box 5	
Mediator 1: Positive emotional intensity	Mono-item scale Seven-point Likert-type (1 = not at all / 7 = very much)	When choosing the box of chocolates, I feel positively excited: (1 = not at all / 7 = very much)	Chitturi et al. (2008)
Mediator 2: Difficulty to justify (α = .597)	Five items for each box; seven-point Likert-type (1 = very easy to justify / 7 = very difficult to justify)	I think that choosing to receive/give the box (1, 2, 3, 4, 5) would be a choice: (1 = very easy to justify / 7 = very difficult to justify)	Thomas and Tsai (2012)
Manipulation check 1: Social distance (α = .79)	Two items; seven-point Likert-type (1 = for me / 7 = for another person)	I have made a choice: The box was: (1 = for me / 7 = for another person)	Own measure
Manipulation check 2: Need to justify (α = .59)	Two items; seven-point Likert-type (1 = not at all / 7 = very much)	When making my choice, I looked for reasons to justify it. When making my choice, I was asked to justify my selection between the boxes of chocolates	Own measure
Manipulation check 3: Hedonic aspect of the chocolate product and each chocolate box	Mono-item scales Seven-point Likert-type (1 = totally utilitarian / 7 = totally hedonic)	Participants read the definitions of hedonic and utilitarian products and rate the chocolate box product and each chocolate box on a 7-points scale	Roggeveen et al., 2015
Confounding check 1: Mood (α = .89)	Same as study 1		
Confounding check 2: Involvement during the task (α = .73)	Same as study 2		
Confounding check 3: Level of hunger	Mono-item scale Seven-point Likert-type (1 = not hungry at all / 7 = extremely hungry)	Do you are hungry right now? (1 = not hungry at all / 7 = extremely hungry)	Cornil and Chandon, 2016

Table 2. Effect of spatial distance on hedonic mouse choice as a function of the need to justify

Effect of spatial distance on hedonic mouse choice under the non-salient need to justify condition							Confidence intervals 95% of Exp (β)		Effect of spatial distance on hedonic mouse choice under the salient need to justify condition						Confidence intervals 95% of Exp (β)	
Variables	β	E.S.	Wald	ddl	p	Exp (β)	Lower	Upper	β	E.S.	Wald	ddl	p	Exp (β)	Lower	Upper
Spatial distance	-0.924	0.457	4.079	1	0.043	0.397	0.162	0.973	0.503	0.487	1.068	1	0.301	1.654	0.637	4.291
Intercept	-0.175	0.678	0.067	1	0.796	0.840			-2.484	0.815	9.300	1	0.002	0.083		
-2 LL = 127.522 R^2 of Nagelkerke = 0.049									-2 LL = 115.945 R^2 of Nagelkerke = 0.014							

Figures

Figure 1. Conceptual model



Appendices

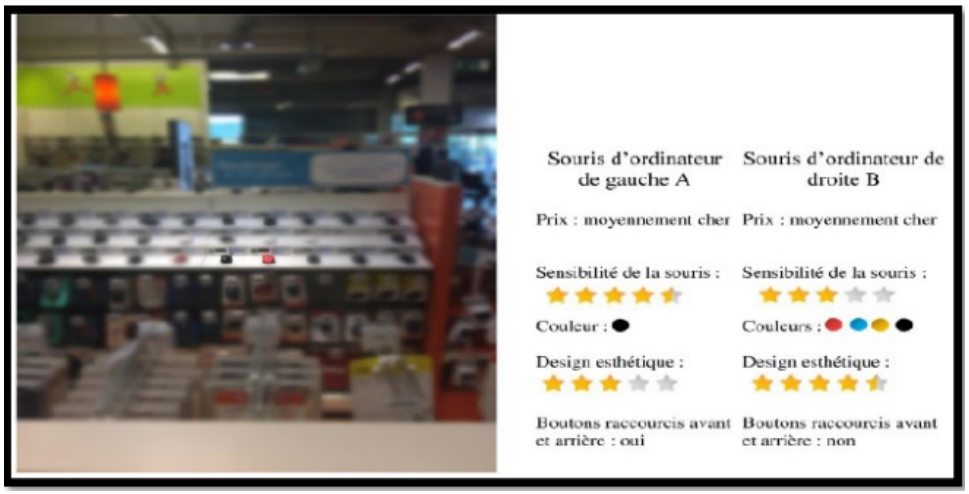
Appendix A. Stimuli for Experiment 1, diaper bags

Hedonic diaper bag (A)	Utilitarian diaper bag (B)
	
Dimensions: Height 10.24 inches; Width 3.94 inches; Length 11.81 inches Colors available: 4 different multicolored prints Number of pockets: 2 Aesthetic design: ★★★★½ Price: Intermediate level	Dimensions: Height 12.60 inches; Width 5.51 inches; Length 14.96 inches Colors available: 1 black print Number of pockets: 5 Aesthetic design: ★★½☆☆ Price: Intermediate level

Appendix B. Stimuli for Experiment 2, computer mice

Close spatial condition

Remote spatial condition

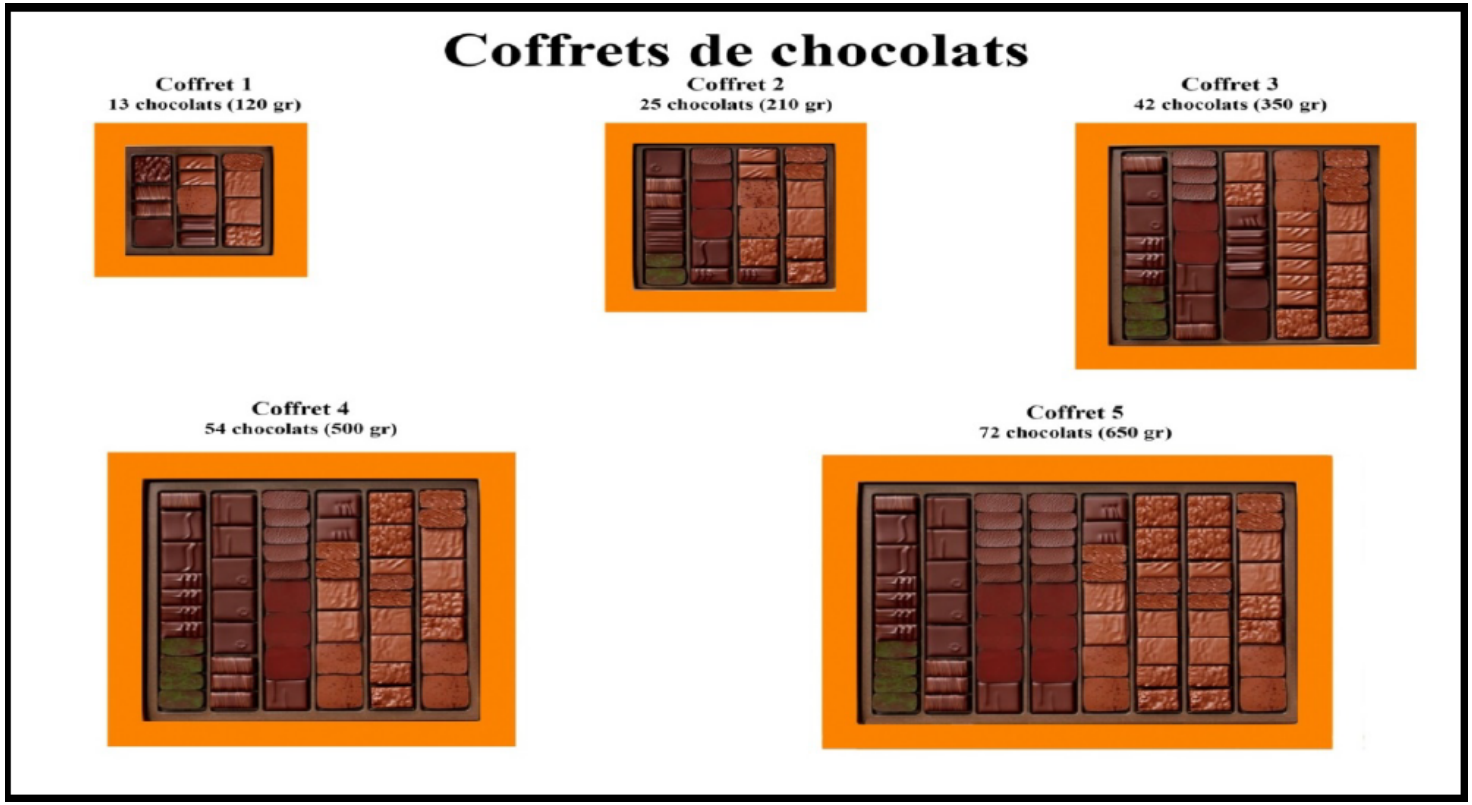


Note: Utilitarian mouse on the left and hedonic mouse on the right

Translation of Appendix B

Utilitarian mouse (A)	Hedonic mouse (B)
Price: Intermediate-level	Price: Intermediate-level
Mouse sensitivity:	Mouse sensitivity:
Color:	Colors:
Aesthetic design:	Aesthetic design:
Shortcut button front and back: Yes	Shortcut button front and back: No

Appendix C. Stimuli for Experiment 3, boxes of chocolates



Translation of Appendix C		
Box	Number of chocolates	Weight (equivalence in ounces)
1	13	4.23
2	25	7.41
3	42	12.35
4	54	17.64
5	72	22.93