The dilemma of the hedonic – Appreciated, but hard to justify

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ABSTRACT

With the experiential turn in Human–Computer Interaction (HCI), academics and practitioners broaden their focus from mere task-fulfillment (i.e., the pragmatic) to a holistic view, encompassing universal human needs such as relatedness or popularity (i.e., the hedonic). Accordingly, many theoretical models of User Experience (UX) acknowledge the hedonic as an important aspect of a product’s appeal. In choice situations, however, people (i.e., users, consumers) overemphasize the pragmatic, but fail to acknowledge the hedonic. The present research explores the reasons for this phenomenon. We suggest that people attend to the justifiability of hedonic and pragmatic attributes rather than to their impact on experience. In other words, they choose what is easy to justify and not what they enjoy the most. Since providing justifications is easier for pragmatic than hedonic attributes, people arrive at a primarily pragmatic choice, even if they would feel better with the hedonic. We explored this assumption, called the Hedonic Dilemma, in four empirical studies. Study 1 (N = 118) revealed a positive correlation between the need for justification and pragmatic choice. Study 2 (N = 125) explored affective consequences and justifications provided for hedonic and pragmatic choices. We further explored two different ways to reduce the Hedonic Dilemma. Study 3 (N = 178) enhanced the justifiability of hedonic choice through product information which suggested hedonic attributes as legitimate. In consequence, hedonic choice increased. Study 4 (N = 133) manipulated the need for justification through framing the choice context. A significant positive effect of a “low need for justification” frame on purchase rates occurred for a hedonic but not for a pragmatic product. Our research has a number of implications, reaching from how to elicit requirements to general strategic considerations when designing (for) experiences.

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1. Introduction

For more than a decade, the “experiential turn” (see Hassenzahl and Tractinsky, 2006) for an overview) in Human–Computer Interaction (HCI) acknowledges aspects beyond the task-oriented, such as pleasure (Jordan, 1998), fun (Draper, 1999), the hedonic (Hassenzahl et al., 2000), beauty (Tractinsky et al., 2000), the ludic (Gaver, 2002), emotions (Desmet et al., 2001), and experience (McCarthy and Wright, 2004). Though different in detail, these approaches agree that attributes beyond effectiveness and efficiency play an important role for the appeal and acceptance of interactive products – a claim, nowadays widely accepted among academics and practitioners of HCI.

Many of the available models of User Experience (UX) broadly distinguish between instrumental, task-oriented, pragmatic and non-instrumental, self-oriented, hedonic attributes of interactive products (see Hassenzahl (2010) for an overview). More specifically, Hassenzahl (2003, 2010) argued that pragmatic quality summarizes the product’s perceived ability to support the achievement of do-goals, such as “making a telephone call”, “finding a book in an online-bookstore”, or “setting-up a webpage”. However, people do those things for a reason. “Making a telephone call” is not an end in itself, it is – amongst others – a way to feel related to one’s spouse when being away or a way to kill time when being bored (i.e., to feel stimulated). Such underlying reasons ultimately stem from basic human needs, such as relatedness, stimulation, or competence (Hassenzahl et al., 2010). They describe how people want to be (e.g., related, stimulated, competent); they are be-goals (see Carver and Scheier, 1998). Hedonic quality summarizes the product’s perceived ability to support the achievement of such be-goals. Assessing a product’s pragmatic quality calls for a focus on functionality and usability in relation to a potential task at hand. Assessing a product’s hedonic quality calls for a focus on the Self and its needs, that is, the question of why someone owns and uses a particular product. The concept of hedonic quality is still evolving. But the contribution of hedonic quality to a product’s appeal and acceptance, and the viability of separating the hedonic from the pragmatic, are already well-supported empirically (e.g., Hassenzahl and Monk, 2010; van Schaik and Ling, 2008; van Schaik and Ling, 2011).
An aspect so far neglected by HCI researchers is the potential impact of the qualitative difference between hedonic and pragmatic quality attributes on product choice. Just imagine choosing between a $50 certificate for a dinner in a nice restaurant (i.e., a hedonic option) and a $50 certificate for groceries from the supermarket around the corner (i.e., a pragmatic option). Okada (2005) confronted people with both alternatives in a combined choice situation. Although participants rated the dinner certificate to be more appealing, they predominantly chose the groceries certificate. Okada (2005) argued this to be the consequence of a justification process. Driven by a general need for justification, people think about reasons for their choice. However, it may be more difficult to envision reasons for obtaining primarily hedonic objects, because their benefits are rather diffuse and hard to quantify. In addition, hedonic alternatives often go beyond the bare necessity. Thus, they are viewed as wasteful, and their acquisition or consumption becomes associated with luxury, indulgence, or guilt (e.g., Kivetz and Simonson, 2002; Prelec and Loewenstein, 1998; Strahilevitz and Myers, 1998). Hedonic quality – or more broadly, positive experiences through fulfillment of human needs – can be understood as the ultimate benefit of using a product. Nevertheless, this benefit is more ephemeral and, thus, harder to justify than any pragmatic benefit of product use. This imbalance may be even more pronounced in the domain of interactive products, with its traditional focus on task-fulfillment. From this perspective, the importance of pragmatic attributes is self-evident. They typically do not require additional justification. But to justify hedonic attributes, one cannot rely on the widely accepted notion of task-fulfillment. Since they benefit “only” the Self, one needs to refer to personal needs and feelings, and the subjective pleasure derived from hedonic attributes. This certainly emphasizes their relevance for experience. But at the same time, the subjectivity and seeming irrationality of hedonic attributes makes them more questionable as a reason for choice. To summarize, while hedonic quality is appealing, its potential consideration in choice falls well behind that of pragmatic quality. This is due to a need to justify a choice and an asymmetry in the justifiability of hedonic and pragmatic attributes.

Diefenbach and Hassenzahl (2008, 2009) found evidence for this phenomenon in the context of interactive products. Their studies focused on visual appeal (i.e., beauty) as a hedonic attribute and usability as a pragmatic attribute of mobile phones. Note, that we understand an “attribute” as a quality aspect that individuals ascribe to the product, based on information provided or personal experience. Usability is thus a judgment about a product’s perceived capability to achieve given tasks, in a given context, with certain efficiency. This is akin to “apparent usability” (Kurosu and Kashimura, 1995) or “perceived usability” (e.g., Tractinsky et al., 2000). Beauty is thought of as a judgment as well, more specifically, “a predominantly affect-driven evaluative response to the visual Gestalt of an object” (Hassenzahl, 2008). Attributes like “usability” and “beauty” thus refer to people’s judgments about those particular aspects of interactive products. In their studies, Diefenbach and Hassenzahl (2009) revealed a reluctance to pay for a more beautiful mobile phone (Study 1) but a preference for a more beautiful phone when no surcharge was required (Study 2). However, participants who then chose the more beautiful phone still justified their choice by referring to marginal advantages in usability. Finally, another choice scenario required an explicit trade-off between beauty and usability, i.e., there was no opportunity to justify the choice of the more beautiful phone by pragmatic attributes. This led to a sharp increase in choices of the primarily pragmatic phone (Study 3). In sum, those studies demonstrated that people appreciate beauty (Study 2), but at the same time are not willing to pay for it (Study 1), or to accept any drawbacks in usability in return (Study 3). We suggested that those preference shifts reveal a basic preference for beauty (i.e., the hedonic), which, however, is overridden in situations where people feel a need to justify their choice. The aim of the present research is to gain a deeper understanding of this Hedonic Dilemma – or the dilemma of “why don’t we choose what makes us happy?” (Hsee and Hastie, 2006) – and the specific role of justification.

This paper starts with a discussion of the theoretical background of the suggested dilemma. We then present a series of four studies, organized in two parts, on the impact of justification within trade-offs between hedonic and pragmatic attributes. The present studies advance our understanding by not only demonstrating the phenomenon of context-dependent preference shifts between primarily hedonic and pragmatic products, but also by exploring justification as underlying driver. Study 1 revealed a correlation between the perceived need for justification and pragmatic choice, and identified differences in affective consequences of a primarily hedonic versus primarily pragmatic choice. Affective consequences and stated reasons for hedonic and pragmatic choice were further explored in Study 2. The second part of studies (Study 3 and Study 4) specifically explored ways of reducing the impact of the dilemma on choice. Study 3 enhanced the justifiability of hedonic choices by legitimating hedonic attributes. In Study 4, the general need for justification was reduced by framing a purchase as gratification. Altogether, the studies supported the notion that justification lies at the heart of the Hedonic Dilemma, and, in addition, demonstrated strategies to alleviate it.

2. Theoretical background

2.1. The origin of the hedonic/pragmatic model in consumer research

Since the influential article by Hirschman and Holbrook (1982) on hedonic consumption, many authors (e.g., Batra and Ahtola, 1990; Mano and Oliver 1993) in the field of consumer research took up the distinction between the hedonic and the utilitarian dimension of perceived product quality. While typical hedonic attributes are “exciting”, “interesting”, “fascinating”, or “fun”, utilitarian attributes are “efficient”, “practical”, “necessary”, or “useful” (e.g., Batra and Ahtola, 1990; Spangenberg et al., 1997; Voss et al., 2003). A number of studies explored the relation of both dimensions to different facets of product experience, such as physiological arousal, affect in general, involvement, product satisfaction, resulting specific cognitions, and global product evaluation (e.g., Böhm and Pfister, 1996; Chandon et al., 2000; Dhar and Wertenbroch, 2000; Mano and Oliver 1993). A central finding was that both dimensions significantly contribute to product satisfaction (e.g., Mano and Oliver 1993). This implies that both, hedonic and pragmatic attributes, must be taken into account for creating a fully satisfying product experience.

2.2. Hedonic and pragmatic attributes of interactive products

Hassenzahl and colleagues (2000) first introduced the notion of hedonic and pragmatic (back then: ergonomic) quality to HCI and further developed the concept. Accordingly, scales capturing hedonic and pragmatic quality of interactive products have been developed (e.g., Hassenzahl et al., 2000, 2003; Huang, 2004; Karson, 2000). A number of studies explored the links of the two quality dimensions to different facets of product experience (Hassenzahl, 2003; Chitturi et al., 2007). Finally, both dimensions have been identified as relevant predictors of an interactive product’s overall evaluation (e.g., Hassenzahl, 2001; van Schaik and Ling, 2008, 2011).

In fact, the ubiquitous, continuous impact of hedonic attributes on product experience seems obvious. Beauty, for example,
influences the relationship between user and product from the very first sight (Bloch et al., 2003; Hollins and Pugh, 1990). A first visual impression generates an evaluative response towards the product (Lindgaard, 2007), which is likely to impact later judgments about value and quality (Hassenzahl and Monk, 2010). In addition, a certain level of pragmatic quality is often taken for granted. While its absence will certainly stand out in a negative way, its existence itself is not a rich source of pleasure. To give an example: a mobile phone's speech quality is simply expected. If the phone is not good at this, it will be experienced as negative. However, a phone is rarely praised for its speech quality (except by tech journalists). An outstanding, beautiful design, perfectly fitting one's personal style, however, is able to directly address human needs, such as popularity. Pragmatic quality can thus be considered as a "hygiene factor", enabling positive experience through removing barriers, and hedonic quality as a "motivator", enabling positive experience in a direct way. This was also supported by a recent study by Hassenzahl and colleagues (2010). They found only an indirect link between pragmatic quality and positive experience, but a direct link between hedonic quality and positive experience.

2.3. The dilemma of the hedonic

Given the importance of hedonic attributes for a positive User Experience, it is only natural that hedonic attributes should be considered important in product choice. However, findings from consumer research suggest that people are skeptical about hedonic attributes as legitimate choice criteria (e.g., Chitturi et al., 2007; Okada, 2005). This creates a dilemma: if hedonic attributes are downplayed in choice, although they are crucial for the quality of experience, people may end up choosing what they actually do not want. Those potential inconsistencies between choice and actual experience were demonstrated by Hsee and colleagues’ (2003) work on “lay rationalism” and “lay functionalism”. In one study, for example, they showed that given the choice of purchasing one of two television sets, a considerable part of participants chose the one with the higher picture but lower sound quality, rather than the one with a more balanced distribution of sound and picture quality. However, another group of participants was asked to pick the one they would enjoy the most. In this more experiential frame, more participants preferred the one with the more balanced distribution. Those participants obviously considered the movie watching experience as a whole, whereas in the aforementioned purchase frame, participants focused on maximizing the quality of the primary function only (i.e., picture quality for a TV). However, this "lay functionalism" may eventually lead to the less positive experience. In sum, Hsee and colleagues (2003) demonstrated that when making a choice, people tend to focus on "rationalistic" factors, such as the product's primary function or other "hard", objective, unambiguous attributes. At the same time, they downplay "soft", subjective, ambiguous attributes, and attributes unrelated to a product's primary function (e.g., sound quality of a television). Applied to the hedonic/pragmatic model, we suggest a parallel between what people typically consider "rational" aspects and pragmatic attributes on the one hand, and "soft", "irrational" aspects and hedonic attributes on the other hand. As a consequence, hedonic attributes may be downplayed in choice situations, despite their role as drivers of positive experience. What emerges is a gap between choice (predominantly driven by the pragmatic) and experience (driven by the pragmatic and the hedonic) – the Hedonic Dilemma.

2.4. Justification as the source of the dilemma

We suggest differences in the justifiability of hedonic and pragmatic attributes as the main reason for downplaying the hedonic in choice. Hedonic attributes are not disregarded per se – they may even attract more attention than pragmatic attributes. But as soon as a choice requires an explicit tradeoff between hedonic and pragmatic attributes, the need for justification may lead to a neglect of hedonic attributes, due to their lacking justifiability. If, however, no tradeoff is required, hedonic attributes can be considered in secret. Accordingly, several studies showed that people justified their choice by referring to pragmatic attributes, even though statistical analysis revealed hedonic attributes to be the deciding factor (e.g., Diefenbach and Hassenzahl, 2009; Tractinsky and Zmiri, 2006). In other words, pragmatic attributes served as a justification for hedonic benefits. This pattern accords to what Keinan and colleagues (2009) call a "functional alibi". They argue that "consumers rationalize their frivolous behavior by inflating the perceived value of minor functional features or aspects of the luxury product [...]. For example, consumers whose cars never touch a dirt road often justify the purchase of an extravagant SUV by its performance in extreme driving conditions". Thus, even if hedonic attributes are crucial for choice, they are only rarely acknowledged as such on an overt, rational level. As soon as justification is required, hedonic attributes are downplayed (e.g., Diefenbach and Hassenzahl, 2008, 2009). One may think of it as a continuum. As long as the need for justification is low (e.g., due to the lack of an explicit trade-off between hedonic and pragmatic), there is no need to question the desire for the hedonic. But with mounting need for justification, justification may trump one's desire, and the attribute's justifiability becomes more relevant for choice than its impact on experience. Accordingly, the preference for a primarily hedonic product is expected to be susceptible to variations in the need for justification, whereas the preference for a primarily pragmatic product (whose choice is justified per se) is not.

The assumption of such an asymmetric effect is supported by studies from consumer research. For example, a differential effect of the effectiveness of promotion for primarily hedonic and primarily pragmatic products was revealed. For primarily hedonic products, promotion led to a significant increase in purchase, since it provided a welcome justification for a purchase which would have been hard to justify otherwise. In contrast, pragmatic product purchase is justified per se and was thus not affected by external justifications provided by promotions (e.g., Zheng and Kivetz, 2009). Khan and Dhar (2010) studied the effectiveness of discounts on certain items in product bundles. They revealed discounts (i.e., potential justifications for product purchase) to be more effective when framed as savings on the hedonic item than when framed as savings on the pragmatic item – even though the total price for the two products remained the same. Finally, Chiou and Ting (2011) revealed a differential effect of shopping motivation (goal oriented vs. experiential) on hedonic and pragmatic purchase. Again, pragmatic purchase was unaffected by the context. Expenses on hedonic products, however, increased when the purchase was framed as planned and related to a particular objective – which facilitated justification. All these findings indicate that the problem of justification is especially salient for the acquisition of primarily hedonic products. This perspective is also supported by a number of context-dependent preference shifts from pragmatic to hedonic options in choice situations with a reduced need for justification. For example, Böhm and Pfister (1996) found an increased focus on hedonic attributes for product choices in private compared to public contexts. Similarly, O'Curry and Straehlitz (2000) found a preference for pragmatic products in standard purchase situations, but a shift to hedonic products when it was about choosing lottery prizes. In addition, preferences for pragmatic versus hedonic options vary between separate choice (i.e., only one product to choose or reject) and joint choice (i.e., a choice between two or more products simultaneously). In a field study in a restaurant, Okada (2005) studied preferences for a more "pragmatic",...
healthy dessert (low-fat Cheesecake deLite) and a “hedonic”, less healthy, but probably more delicious, dessert (Bailey’s Irish Cream Cheesecake). When both desserts were offered on the same day (i.e., jointly), the pragmatic cake was ordered more frequently. But when each dessert was offered on a different day (i.e., separately), preferences reversed. Again, this preference shift from the pragmatic (in a joint choice situation) to the hedonic (in a separate choice situation) can be explained by justification. Choice in a joint situation requires an explicit trade-off, i.e., an explicit comparison of attributes (e.g., healthy versus tasty), which implies justification. The absence of such a trade-off in a separate choice situation leads to a relative reduction of the need for justification, and an according increase of hedonic choice. Taken together, the reported findings suggest that whenever a choice between a predominantly hedonic and a predominantly pragmatic option requires justification, a pragmatic choice may not be driven by a true preference but by the need for justification.

2.5. Potential consequences of the dilemma

A tendency towards the pragmatic in choice situations, due to justification, can be disadvantageous in many respects. As hedonic attributes are directly related to be-goals, and thus close to the justification, can be disadvantageous in many respects. As hedonic and pragmatic use, depending on whether expectations towards the product have been met or not. For example, Chitturi (2009) showed that the presumption of a negative consumption experience, i.e., the product did not fulfil one’s expectations, evokes higher feelings of guilt for a primarily hedonic product compared to a primarily pragmatic alternative. However, a profound exploration of the differential relation of justification to hedonic and pragmatic attributes and its consequences for choice is still lacking. This gap will be addressed by the present research.

3. Product choice and justification

3.1. Study 1: Justification, product choice, and affective consequences

3.1.1. Hypotheses and procedure

Study 1 explored the relation between need for justification and product choice and differences in affective consequences of pragmatic versus hedonic choice. We confronted participants with the choice between a primarily pragmatic and a primarily hedonic product. Given that the justifiability of pragmatic attributes is higher than that of hedonic attributes, we expected a more frequent choice of the pragmatic over the hedonic product (H1). However, we assumed this seeming preference for the pragmatic to be the consequence of participants’ perceived need for justification rather than a “true” preference. Accordingly, participants who chose the pragmatic were expected to report a higher perceived need for justification (H2) but to be less happy with their choice, i.e., they will report less positive post-choice affect (H3).

The study was carried out online with SurveyMonkey (www.surveymonkey.com) in German. An invitation with a link to the study was sent to students’ unions representatives of various universities in Germany, Austria and Switzerland. They were asked to distribute the link via mailing lists or their webpage. Accordingly, a response rate could not be computed. In the present study, 118 of the 160 (74%, retention rate) individuals who started the study completed it as well. Those were included in the final sample (N = 118, 85 female, mean age = 24 years, min = 18, max = 41). The choice scenario asked participants to imagine having just closed a mobile phone contract. This contract allowed participants to choose a complimentary phone, out of a set of four (see Fig. 1). The phones were selected from a pool of ten, pre-tested by an independent sample of 223 participants (167 female, mean age = 25 years, min = 16, max = 49), who ranked the ten phones.

Fig. 1. Mobile phones. A and B are the most beautiful (i.e., the most hedonic), C and D the least beautiful (i.e., the least hedonic).
according to their beauty. A and B were considered the most beautiful phones (A: mean rank = 2.62, 95% CI [2.35; 2.89]; B: mean rank = 3.72, 95% CI [3.41; 4.03]), whereas C and D were considered the least beautiful phones (C: mean rank = 7.58, 95% CI [7.08; 7.74]; D: mean rank = 7.6, 95% CI [7.25; 7.91]). These differences in beauty served as the operationalization of the broad notion of hedonic quality (see Hassenzahl and Monk, 2010, for the conceptual link between beauty and hedonic quality). Note, that differences in hedonic quality (here: beauty) were not explicitly mentioned, but were only implicitly suggested through the pictures of the phones.

We manipulated pragmatic quality by providing explicit usability ratings, presented as the result of a “customer survey.” The ratings had different ranges, however, the median rating was always lower for the more beautiful phones (A/B: 7 of 15 points) than for the less beautiful phones (C/D: 9 of 15 points). As a consequence, A/B were predominantly hedonic (higher beauty but lower usability) and C/D were predominantly pragmatic (higher usability but lower beauty). The participants’ choice thus required a tradeoff between hedonic and pragmatic attributes.

Participants made their choice (i.e., picked one phone out of four) and were then asked to rate their perceived need for justification in the present choice situation on a five-point-scale, ranging from “justification was irrelevant” to “justification was highly relevant”. They were further asked to vividly imagine the situation of receiving the chosen phone and to rate their overall affective experience with the help of the Positive and Negative Affect Schedule (PANAS, Watson et al., 1988). PANAS is a widely used questionnaire, which measures positive affect (PA) and negative affect (NA) by verbal descriptors of different affective experiences. Its short form (Mackinnon et al., 1999) consists of ten items: alert, determined, enthusiastic, excited, and inspired for positive affect, and afraid, distressed, nervous, scared, and upset for negative affect. Participants indicated the intensity of each particular facet of affective experience on a five-point scale, ranging from “not at all” to “extremely”. PANAS can assess affect within shorter and longer time frames (e.g., “today”, “during the past weeks”) by different temporal instructions. In the present study, we used the “momentary” affect instruction (i.e., “right now”), recommended to assess relatively short-term fluctuations in affect (Watson and Clark, 1999). Several validation studies (Watson and Clark, 1999) demonstrated PANAS to be sensitive to short-term changes in internal or external circumstances, which makes it appropriate to assess momentary affect. PANAS assumes a hierarchical structure (Watson and Tellegen, 1985), with two broad factors capturing the valence of affect (positive, negative). We calculated scale values for positive and negative affect by averaging the respective items. In the present study, the internal consistency of positive and negative affect was satisfying (Cronbach’s Alpha positive affect: .82; negative affect .71). Both scales were uncorrelated ($r = .01$, $p > .05$).

3.1.2. Results and discussion

As expected (H1), the primarily pragmatic phones (C/D) were chosen significantly more often (81 of 118, 69%) than the primarily hedonic phones (A/B, Chi square test for uniform distribution, $\chi^2 = 16.41$, $p < .001$). Moreover (H2), participants who chose a primarily pragmatic phone reported a significantly higher perceived need for justification ($M = 3.30$) compared to those who chose a primarily hedonic phone ($M = 2.68$, $t(116) = 2.56$, $p < .05$, $d = .52$). However, even participants with a high need for justification may have had a “hidden passion” for the hedonic product but simply could not choose accordingly. This dilemma – not choosing what one prefers, because of justification – became apparent in positive affect after choice. As expected (H3), positive affect was more pronounced for participants who chose a primarily hedonic phone ($M = 2.91$) than for those who chose a primarily pragmatic phone ($M = 2.59$, $t(116) = 1.99$, $p < .05$, $d = .39$). No significant differences emerged for negative affect (hedonic: $M = 1.32$, pragmatic: $M = 1.41$, $t(116) = 1.07$, $p > .05$, $d = .19$). However, one could argue that reasoning about justification (which was more pronounced among those who chose the pragmatic) rather than our assumed implicit dissatisfaction with the chosen product may have dampened positive affect, and then resulted in a spurious correlation between positive affect and choice. But this was not the case. There was no significant correlation between perceived need for justification and positive affect (partial $r = .02$, $p > .05$), and the significant correlation between positive affect and hedonic choice ($r = .18$, $p < .05$) remained stable when controlling for justification (partial $r = .19$, $p < .05$). In other words, the reduction of positive affect among participants who chose the pragmatic is not a consequence of justification per se, but of the resulting choice. Participants who “privately” preferred a primarily hedonic phone but nevertheless chose a pragmatic phone were simply not as happy about the product as those who followed their “true” preferences.

3.2. Study 2: Affective reactions to an involuntary change

3.2.1. Hypotheses and procedure

Study 2 further explored the notion that people tend to choose the pragmatic, because of justification, although they actually prefer the hedonic. Again, the study was conducted online and a link was distributed via students’ unions of German-speaking universities: 125 of 172 (73%) completed the whole survey and constituted the final sample ($N = 125$, 73 female, mean age = 25 years, min = 19, max = 52). The scenario was similar to Study 1. Participants were confronted with a hypothetical choice scenario which required a tradeoff between a primarily hedonic and primarily pragmatic mobile phone. More specifically, they were asked to imagine having just renewed their mobile phone contract, which allowed them to pick a complimentary phone. In the present study, only two alternative phones were presented. Both were described by a “test report” only, i.e., no pictures of phones were provided. The “test report” summarized an expert team’s judgments on a 20-point scale on two pragmatic (“practicality”, “technology”) and two hedonic attributes (“visual appearance”, “innovativeness”). In addition to the ratings, there was a short description of each attribute, such as “Visual Appearance refers to issues such as style, color and form”. The primarily hedonic phone had a median rating of twelve (of 20) on the hedonic attributes and median value of eight (of 20) on the pragmatic attributes. For the other, primarily pragmatic phone, median ratings were reversed.

Participants made their choice (i.e., picked one phone out of two) and were then asked to provide reasons for their choice, in an open question on the subsequent web page. Subsequently, all participants were told that unfortunately, their original choice was no longer available and that they would receive the other phone instead. To assure that participants were aware of the characteristics of this phone, we once again confronted them with the results of the “test report”. Again, participants had to vividly imagine the situation of receiving the (here: non-chosen) phone and to rate their affective experience with the help of the Positive and Negative Affect Schedule (PANAS, Watson et al., 1988). In the present study, the internal consistency of positive and negative affect was again satisfying (Cronbach’s Alpha positive affect: .83; negative affect .78). Both scales were slightly correlated ($r = .27$, $p < .01$). However, internal consistency clearly exceeded inter-scale correlation.

In accordance with the previous study, we expected a more frequent choice of the primarily pragmatic phone compared to the primarily hedonic phone (H1). Assuming that a considerable number of participants will choose the pragmatic just because of their need for justification, we expected different affective responses to the involuntary change of phones. Participants who
chose the primarily hedonic phone, based on a true desire, may be truly disappointed about the change. But participants who chose the primarily pragmatic phone, because of justification, may feel more positive about the change. By the change of phones, they may finally get what they desired in private, i.e., the primarily hedonic phone. However, the change of phones is beyond their control, which circumvents justification. These different affective reactions will result in a disordinal interaction between the chosen product (primarily hedonic, primarily pragmatic) and the valence of affect (positive, negative) on the intensity of affect (H2). We expected that for participants who changed from hedonic to pragmatic, negative affect will outweigh positive affect (H3). In contrast, for participants who changed from pragmatic to hedonic, positive affect will outweigh negative affect (H4), even though they did not receive the phone they had originally chosen.

3.2. Results and discussion

As expected (H1), we found a clear preference for the primarily pragmatic phone: 103 of 125 participants (82%) made a primarily pragmatic choice, Chi square test for uniform distribution, $\chi^2 = 52.48$, $p < .001$.

A content analysis of participants’ reasons for choice showed that – quite naturally – all participants mentioned the chosen phones’ benefits (i.e., attributes with a high expert rating). About half of the participants (54%) also mentioned attributes of the rejected phone, which were in general regarded as less important. Interestingly, the general line of reasoning differed depending on whether the choice was primarily hedonic or primarily pragmatic. Participants with the primarily hedonic choice, mentioned and “admitted” that the pragmatic attribute values below average could be a problem, which, however, they hoped to manage (e.g., “I think I could rather adapt to usability drawbacks than to an ugly appearance.”). In contrast, participants who chose the primarily pragmatic did not voice any doubts about the low hedonic attribute values. A considerable part of those who chose the primarily pragmatic product (41%) not only declared pragmatic attributes to be more important but also actively discounted the hedonic (e.g., “I don’t give a damn about beauty”, “A mobile phone is an object of utility...I don’t care for superfluous gimmicks!”). However, we suspect that this bold renunciation is rather a way to come to terms with one’s own choice than a true detest of the hedonic.

In line with this reasoning, an analysis of variance with change (from hedonic to pragmatic, from pragmatic to hedonic) as between-subjects factor, valence of affect (positive, negative) as within-subjects factor and intensity of affect as dependent variable revealed a significant, disordinal change x valence of affect interaction (H2), $F(1, 123) = 7.93$, $p < .01$, $\eta^2 = .06$, and no significant main effects (see Fig. 2).

Simple effect tests revealed no significant difference between positive and negative affect for participants who had to change from hedonic to pragmatic ($F < 1$, see Fig. 2, left). This indicates neutral rather than clearly negative affect. H3 was thus not confirmed. But as expected (H4), participants who changed from pragmatic to hedonic reported a significantly higher intensity of positive compared to negative affect ($F(1, 123) = 22.25$, $p < .01$, see Fig. 2, right). Although they had to change an option they initially discounted, they still felt more positive than negative. This indicates that the forced change was a welcome opportunity to receive what they actually desired. But given the free choice, they did not choose what they expected to make them happy. This is in line with Hsee and Hastie (2006), who obtained similar results and consequently call into question people’s ability to make choices in their own interest. Based on the present findings, we suggest that people do not suffer from a lack of ability to identify the most satisfying option. It is the need to justify their choice, which prevents them from choosing according to their true interest.

3.3. Summary

In sum, while participants predominantly chose the primarily pragmatic phone (Study 1 and Study 2), the prospect of receiving a primarily hedonic mobile phone resulted in more positive affect (Study 1 and Study 2) – even if one’s original choice was pragmatic, and the change to the hedonic was forced (Study 2). While there are certainly people who are “true” supporters of the primarily pragmatic, at least some of the participants who seemingly favored the primarily pragmatic, actually wanted the primarily hedonic. Study 1 further revealed pragmatic choice to be accompanied by a higher need for justification. This supports our notion that due to the need for justification, people do not necessarily base their choices on their “true” preferences (or better: desires).

4. Potential ways out of the hedonic dilemma

The first two studies demonstrated the existence and relevance of the suggested Hedonic Dilemma in the context of interactive products. The second set of studies extended these findings by further exploring exemplary ways to reduce the effect of the dilemma. Two strategies were employed. One manipulated the justifiability of hedonic choices through additional information about the product (Study 3). The other manipulated the need for justification through variations in the choice context (Study 4).

4.1. Study 3: Legitimation of hedonic attributes

4.1.1. Hypotheses and procedure

The most straightforward way to solve the Hedonic Dilemma is letting hedonic attributes appear more legitimate, and thus, enhance the justifiability of hedonic choice. In Study 3, we tested the impact of an according manipulation. More specifically, we compared choice rates between a predominantly hedonic and a predominantly pragmatic product depending on the experimentally induced justifiability of hedonic choice (low, high). We did not manipulate the justifiability of pragmatic choice, since we expected no effects. Pragmatic choice is assumed to be justified per se. There is no reason to assume any changes in choice behavior depending on the justifiability of pragmatic choice. Accordingly, Diefenbach and Hassenzahl (2008) found that a manipulation of...
justifiability via ambiguous information about product attributes did only enhance choice rates (compared to a control condition) when it facilitated choosing a hedonic product, but not when it facilitated choosing a pragmatic product.

The study was conducted online and a link was distributed via the students' unions of German-speaking universities. 178 of 205 (87%) individuals completed the survey and constituted the final sample (N = 178, 104 female, mean age = 24, min = 19, max = 35). Just like in Study 1, participants were asked to choose between a predominantly hedonic and a predominantly pragmatic mobile phone. Differences in hedonic quality were operationalized by differences in beauty, presented through pictures of the phones. Based on the pre-tested pictures from Study 1, the two phones for choice were phone A (the most beautiful out of a set of ten) and phone D (the least beautiful out of a set of ten, see Fig. 1). Differences in pragmatic quality were operationalized by differences in usability, verbally described by a “test report”. In this “test report”, phone D was described as “very usable” and phone A as having “some small usability problems”. Moreover, both phones were offering basic features, such as a calendar, a calculator, an alarm and good speech and connection quality. Hence, phone A was primarily hedonic and phone D primarily pragmatic. The justifiability of hedonic choice (low, high) was manipulated through the reference to beauty in the test report. In the low justifiability of hedonic choice condition, the test report was just concerned with all aspects quoted so far. In the high justifiability of hedonic choice condition, the test report also discussed the consequences of the two phones' differences in beauty. More specifically, the pragmatic phone's visual appearance was denoted as “out-dated and hardly appealing”, and the hedonic phone was described as “an eye-catcher, promising a great experience”. Even if the two phones' visual beauty was directly perceivable, an external confirmation of one’s own impression was expected to enhance the justifiability of hedonic choice and, thus, reduce the Hedonic Dilemma. Accordingly, we expected a more frequent choice of the hedonic phone in high justifiability of hedonic choice condition compared to the low justifiability of hedonic choice condition (H1). Within the high justifiability of hedonic choice condition, we expected a more frequent choice of the hedonic over the pragmatic phone (H2). However, within a standard choice situation, i.e., in the low justifiability of hedonic choice condition, we expected a more frequent choice of the pragmatic over the hedonic phone (H3). While the reference to beauty in the test reports was intended to enhance the justifiability of hedonic choice, our intention was not to change the impression of the phones themselves, i.e., the “experiential value” that participants assigned to the phones. If the latter was the case, an enhanced number of hedonic choices in the high compared to the low justifiability of hedonic choice condition could be a priming effect rather than an effect of increased justifiability. To ascertain that this was not the case, we surveyed participants' expectations regarding the experiential quality of the two phones. Participants indicated how good they expected to feel with each phone on a five-point-scale, ranging from “not at all” to “extremely.” Note, that unlike in the previous studies, where affect related to the hedonic and pragmatic phone was compared between subjects, each participant was asked for ratings on both phones (i.e., within subjects). We assumed the perceived experiential value of the phones to be independent from the justifiability manipulation, i.e., there will be no differences in the respective experience ratings (for the hedonic phone, for the pragmatic phone) between the low and the high justifiability of choice condition (H4). However, we expected that participants will give higher ratings to the chosen compared to the non-chosen phone, i.e., participants choosing the hedonic phone will state to feel better with the hedonic compared to the pragmatic phone, and vice versa (H5). Finally, we were interested in whether the experience ratings would turn out differently if surveyed before participants knew they had to make a choice. We included the time of rating as second experimental factor, without a specific hypothesis. This led to a 2 x 2 between-subjects design, varying the justifiability of hedonic choice (low, high) and the time of rating (before choice, after choice). Participants were randomly assigned to one of the four experimental conditions.

4.1.2. Results and discussion

As expected, hedonic choice was significantly more frequent in the high justifiability of hedonic choice condition compared to the low justifiability of hedonic choice condition, (H1, Chi square test of independence, \( \chi^2 = 4.93, p < .05 \), see Fig. 3). This increase of hedonic choice indicated that the experimentally enhanced justifiability encouraged participants to follow their true preference. Accordingly, in the high justifiability of hedonic choice condition, the hedonic phone was chosen more frequently than the pragmatic (H2, Chi square test for uniform distribution, \( \chi^2 = 15.43, p < .001 \), see Fig. 3, right). In the low justifiability of hedonic choice condition, there was a balanced ratio of pragmatic and hedonic choice, although we actually had expected a frequent choice of the pragmatic phone (Chi square test for uniform distribution, \( \chi^2 = 1.06, p > .05 \), see Fig. 3, left). H3 was thus not supported. A potential explanation is that the tradeoff between hedonic and pragmatic quality might have not appeared that strong to participants. This could be due to the information on pragmatic quality by verbal descriptions only. Compared to the information on pragmatic quality by numerical values (Study 1 and Study 2), the verbal descriptions may have had already appeared as more ambiguous. Thus, the less explicit tradeoff may have lead to a slightly enhanced justifiability of hedonic choice in the present study – even in the low justifiability of hedonic choice condition. This explanation is in line with the aforementioned study by Diefenbach and Hassenzahl (2008), which revealed that people make use of ambiguous information on product attributes to justify hedonic choice.

A 2 x 2 x 2 analysis of variance with the type of experience rating as within-subjects factor (rating for the hedonic phone, rating for the pragmatic phone), time of experience rating (before choice, after choice), justifiability of hedonic choice (low, high), choice (hedonic, pragmatic) as between-subjects factors, and experience rating as dependent variable revealed no significant main effects. We found no interaction between type of experience rating and justifiability of choice.

![Fig. 3. Hedonic and pragmatic choice rates as a function of justifiability of hedonic choice.](image-url)
hedonic choice (H4, F(1, 167) = .46, p > .05, Eta² = .003). Independent of the way that hedonic attributes were discussed in the test report (i.e., justifiability manipulation), experience ratings remained on a similar level. This applied to the hedonic (low: M = 3.08, high: M = 3.31) and to the pragmatic phone (low: M = 2.99, high: M = 2.96). As expected, the reference to beauty did not alter the expected experiential value of the phones. Also the expected interaction between type of experience rating and choice emerged (H5, F(1, 167) = 74.82, p < .001, Eta² = .31). Simple effect tests revealed that participants who chose the pragmatic phone gave significantly higher ratings to the pragmatic (M = 3.54) compared to the hedonic phone (M = 2.65, F(1, 167) = 30.48, p < .001). In contrast, participants who chose the hedonic phone gave significantly higher ratings to the hedonic (M = 3.44) compared to the pragmatic phone (M = 2.77, F(1, 167) = 53.28, p < .001). However, the reported interaction effect was further qualified by a significant three-way interaction between type of experience rating, choice and – additionally – time of experience rating (before choice, after choice), F(1, 75) = 4.45, p < .05, Eta² = .03. We calculated separate analyses of variance for the before choice condition and the after choice condition, to test the stability of the interaction effect between type of experience rating and choice on the specification assumed in H5. In both conditions, the interaction between type of experience rating and choice was significant (before choice condition: F(1, 75) = 59.72, p < .001, Eta² = .44; after choice condition: F(1, 96) = 26.90, p < .001, Eta² = .22). The respective simple effect tests confirmed that participants reported the chosen phone as more appealing than the non-chosen phone, irrespective of the time of experience rating. Participants who chose the pragmatic phone gave higher ratings to the pragmatic compared to the hedonic phone (before choice condition; F(1, 75) = 30.89, p < .001, see Fig. 4a, right; after choice condition: F(1, 96) = 6.96, p < .01, see Fig. 4b, right). Participants who chose the hedonic phone gave higher ratings to the hedonic compared to the pragmatic phone (before choice condition; F(1, 75) = 30.12, p < .001, see Fig. 4a, left; after choice condition: F(1, 96) = 25.14, p < .001, see Fig. 4b, left). H5 thus remained supported.

However, the interaction graphs reveal a distinctive pattern of ratings in the after choice condition. Here, the general preference for the chosen phone was less pronounced among participants who chose the pragmatic compared to participants who chose the hedonic phone (this is also indicated by the smaller F-value revealed by simple effects testing). There are two possible explanations for this finding.

First, the affirmation of one’s prior choice through (higher) experience ratings could reflect the need for justification associated with that choice. According to the classical phenomenon of post-choice revaluation, people typically use a revaluation of the chosen and a devaluation of non-chosen to make their choice appear more justified (Brehm, 1956). Participants who chose the hedonic might be more prone to post-choice revaluation than participants who chose the pragmatic, due to the per se lower justifiability of hedonic choice. However, the experimentally enhanced justifiability in the high justifiability of hedonic choice condition should then reduce the need for post-choice revaluation. The fact that there is no interaction with justifiability of hedonic choice thus rather speaks against this explanation. A second explanation refers to the experience ratings given by participants who chose the pragmatic phone. The considerable small difference between experience ratings (for the chosen and the non-chosen option) displays a low confidence of their choice, which might reflect their true expectations. After they had made their choice, they might have realized that they actually were not convinced of the experiential benefits of the chosen option, and rated in only somewhat higher than the rejected option. In this case, pragmatic choices could have resulted from following norms (e.g., “be rational”, “always take the pragmatic”) rather than from true conviction. Similar findings are known from consumer research. Amir and Ariely (2007) demonstrated that people rely on rules rather than anticipated consumption utility when making purchase decisions. Hsee’s (1999) studies on prediction-decision inconsistencies showed that post-choice experience ratings do not necessarily match the choice one had just made before. Thus, choosing the pragmatic might not always be a consequence of conscious reasoning but an automatic tendency, based on a deeply ingrained need for rationality and justification.

4.2. Study 4: Hedonic choices as gratification

4.2.1. Hypotheses and procedure

Study 4 explored a further possibility to facilitate the justifiability of hedonic choice: framing of the choice context.
number of reported framing effects regarding hedonic and pragmatic product choice (see Section 2.4). However, they often rely on settings different from the situation typical for product acquisition, such as winning products in a raffle (e.g., Böhm and Pfister, 1996; O’Curry and Strahilevitz, 2000).

A useful approach for promoting interactive products could be framing product acquisition as a gratification. The gratification frame provides a “reason” for consumption and thus reduces the general need for justification. Such a reduction in the need for justification is considered more relevant for hedonic than for pragmatic products, since the latter do not lack justification anyway. In contrast, “unjustified” hedonic consumption (i.e., without a reason) is assumed to be accompanied by negative affect and strong feelings of guilt – even though empirical reports showed that the actual pleasure derived from hedonic consumption does not depend on whether there is a reason or not (Xu and Schwarz, 2009). Fortunately, there are ways to attain a right for gratification (and thus, hedonic consumption), for example, by preceding efforts (Kivetz and Simonson, 2002). To “deserve” a hedonic product, people typically adopt a generous interpretation of what constitutes an “effort”. Kivetz and Simonson (2002) demonstrated that the preference for a hedonic option (“a luxurious 1-h facial cosmetic treatment”, “a 1-h pampering Swedish or Sports massage”) compared to a pragmatic option (a voucher of the same monetary value for the local grocery store) increased with the number of purchases required before reward attainment in a customer loyalty program. Purchase was obviously interpreted as “effort”, and a high number of purchases entailed the right for hedonic consumption. Sela and colleagues (2009) further revealed that this effect is independent of actual “effort”, it solely depends on whether an activity is declared to be “high effort” or not. Participants made more hedonic choices when a previously solved calculation task was framed as “high effort” compared to when the same task was framed as “low effort”. Besides preceding efforts, other socially valued activities (e.g., performing a charitable act) imply a right for gratification, and in turn, hedonic choice (e.g., Strahilevitz and Myers, 1998). Khan and Dhar (2006) showed that hedonic choices yet increased after a task which only required fantasizing about being a helpful person, i.e., making a hypothetical choice between different jobs of community service. Even thinking about social activities was sufficient to let hedonic choice appear more justified. Based on these findings, we assumed a gratification framing to reduce the need for justification and, thus, encourage hedonic product choice also in the context of interactive products.

We manipulated the need for justification (low, high) by differences in choice context (purchase framed as gratification, standard purchase) and compared (hypothetical) purchase rates for a predominantly hedonic and a predominantly pragmatic product. The predominant product character was realized as between-subjects factor, so that the impact of justification on hedonic and pragmatic product choice could be studied separately. Participants got only one either predominantly hedonic or pragmatic offer, which they could either accept (buy) or reject (not buy). This is an extension of the previous studies, where a direct choice between hedonic and pragmatic was required, which will reveal whether difficulties to justify the hedonic are still an issue. Hence, we employed a $2 \times 2$ between-subjects design, varying the need for justification (low – purchase framed as gratification, high – standard purchase) and the product (hedonic, pragmatic). The study was conducted online and a link was distributed via the students’ unions of German-speaking universities: 133 of 158 (84%) completed the whole survey and constituted the final sample. Participants ($N = 133$, 50 female, mean age = 24, $\text{min} = 19$, $\text{max} = 34$) were randomly assigned to one of the four conditions. In all four conditions, participants were presented with an advertisement for a laptop on sale for 749 € instead of 999 €. They were asked to imagine that the advertised laptop was superior to their own laptop in technical specification. In addition, participants in the low need for justification condition were told to imagine that “due to the enormous efforts for their exams during the last weeks they deserved a gratification”. In the high need for justification condition, there was no additional information on one’s personal situation. Based on a manipulation introduced and pre-tested by Park and Mowen (2007), the product (hedonic, pragmatic) was operationalized by the main usage goals specified in the scenario. In the hedonic product condition these were leisure activities such as chatting, listening to music and playing online games. In the pragmatic product condition these were working tasks, such as writing reports, statistical analyses or literature research. After having read the scenario, participants were asked whether they would like to buy the laptop or not.

We expected the factor need for justification, operationalized by the gratification framing, to have no significant effect on pragmatic purchase. Pragmatic purchases do not require further justification since the product itself is enough of a reason. In contrast, buying a hedonic product needs an additional reason to be justified. Here, differences in the need for justification induced by the context will be relevant. We thus assumed a differential effect of the factor need for justification within the two product conditions. In the pragmatic product condition, we expected no significant differences in purchase rates between the low and the high need for justification condition (H1). In the hedonic product condition, purchase rates will be higher in the low compared to the high need for justification condition (H2).

4.2.2. Results and discussion

We firstly compared purchase rates between the two need for justification conditions to assess the general effectiveness of the applied gratification framing on purchase. Overall, the ratio of purchases to non purchases was significantly higher (57% purchase rate) in the low need for justification condition compared to the high need for justification condition (39% purchase rate; Chi square test of independence, $\chi^2 = 4.25$, $p < .05$). However, separate analyses within the two product conditions revealed a differential effect of the factor need for justification. In the pragmatic product condition, purchase rates were independent from the need for justification (H1, Chi square test of independence, $\chi^2 = 0.63$, $p > .05$, Fig. 5, left). In the hedonic product condition, purchase rates varied depending on the need for justification, i.e., purchase rates were higher in the low compared to the high need for justification condition (H2, Chi square test of independence, $\chi^2 = 4.30$, $p < .05$, Fig. 5, right).

The differential effect of gratification framing once more demonstrated the controversial nature of hedonic quality. Note that in the present study, no direct trade-off between the hedonic and pragmatic was required, since we studied hedonic and pragmatic choice separately. Nevertheless, the need for justification, and thus, the dilemma of the hedonic was still apparent. The decision for or against pragmatic product purchase was independent from the contextually induced need for justification. However, a good part of participants could not convince themselves to buy the hedonic, unless the gratification framing eased the need for justification. This indicates that the primarily hedonic product was certainly appealing to participants. But the link between the existing desire and its reflection in choice rates is fragile and much more susceptible to contextual influencing factors than for primarily pragmatic products.

4.3. Summary

Studies 3 and 4 demonstrated that the dilemma of the hedonic revealed in the first part (and earlier studies) can be reduced by taking justification into account. We explored two different ways
5. General discussion

The present studies confirmed the notion of a Hedonic Dilemma in the context of HCI. At the heart of it lies a general need for justification, combined with the differing justifiability of hedonic versus pragmatic attributes in choice situations. Our studies revealed a desire for hedonic attributes, even in interactive products, which often are still understood as purely pragmatic “tools”. But precisely because of this predominance of pragmatic quality, people may hesitate to give in to their desire for hedonic attributes – at least, as long as the desire lacks justification. The first two studies showed that the need to justify hedonic choice can prevent people from following their true preferences. Study 1 showed that the prospect of a primarily hedonic phone was related to more positive affect, but the pragmatic phone was nevertheless chosen more frequently, primarily by those with a high need for justification. In Study 2, participants seemed almost glad about being forced to change from the chosen, pragmatic to the non-chosen, hedonic product. Study 3 and Study 4 further demonstrated that the impact of justification in choice situations can be manipulated. More specifically, in Study 3, we enhanced the justifiability of hedonic attributes by the explicit reference to those attributes in the product information provided. This let hedonic attributes appear more legitimate and, thus, worth being considered in choice. Finally, Study 4 demonstrated that the choice frame can reduce the general need for justification, here, by creating the feeling of having deserved a gratification. Indeed, any purchase might be easier to justify when framed as gratification compared to a standard purchase. However, our research showed that the manipulation of the need for justification was especially effective for hedonic products, whose acquisition is usually hard to justify.

Our findings shed light on the consequences of hedonic and pragmatic attributes of interactive products in choice situations and the mediating role of justification. A major strength of the present research is the exploration of the Hedonic Dilemma in various settings, including different modes of preference elicitation, different manipulations of the predominant product character, and different product categories. We applied joint (Study 1, Study 2, Study 3) and separate choice settings (Study 4), that is, hedonic and pragmatic choices were studied in direct as well as indirect comparison. We also used a number of different operationalizations of hedonic and pragmatic quality. Hedonic quality was manipulated by textual information on hedonic attributes provided in “test reports” (Study 2), by the usage goal (Study 4), and by pre-tested pictures (Study 1 and Study 3). Pragmatic quality was manipulated by “test reports” on different pragmatic attributes, provided as numerical values (Study 1 and Study 2) or textual information (Study 3), and by the usage goal (Study 4). Though we first focused on one category of interactive products (i.e., mobile phones), we extended our research to another category (i.e., laptops) in Study 4. The continuous replication emphasized the robustness of the phenomenon. Our studies demonstrated that the effect is not tied to a specific setting, and thereby strengthened the proposed theoretical mechanism (i.e., the need for justification and the asymmetry in the justifiability of pragmatic and hedonic attributes). The exploration of the Hedonic Dilemma was further qualified by the inclusion of consequences for affect (Study 1 and Study 2) and judgments on experiential quality (Study 3).

5.1. Limitations and future work

A potential limitation of our studies is their restriction to hypothetical choice. Studying hypothetical choice is a common practice in marketing research, and it has been shown repeatedly, for example, in research on the Endowment Effect (Horowitz and McConnell, 2002), that there is no major difference between hypothetical and real trading. However, we cannot rule out a difference between hypothetical and real choice regarding the particular role of justification. Since hypothetical choices have no real consequences, one could take them less seriously, which would lead to a general decrease in the need for justification. If so, our findings actually emphasize the robustness of effects. Any effect found in a hypothetical choice situation should be even stronger when it is about real choice. However, we admittedly cannot foresee how the (presumably higher) need for justification in real choice situations might interact with other potential influencing factors. We thus cannot be sure whether the phenomenon we revealed in hypothetical choices scenarios will occur in the same way in real choice situations. We therefore seek to extend future research on the Hedonic Dilemma to real choice situations.

Another critique, to some extent common to most experimental work, is the rather artificial, “made” set-up. The limited information about product attributes (i.e., stimuli) provided to the participants did not mirror the potential complexity of real choice situations. In real life, one may be better able to negotiate between hedonic and pragmatic attributes. In fact, one might even get high quality on both, at least, if money is no object. Furthermore, the reductionist presentation of product information may not live up to the holistic, all encompassing concept of User Experience. Admittedly, we only captured a small excerpt of the various factors that potentially influence users’ experience. As with most results from experimental studies, the ecological validity of our findings therefore remains an open question. Nevertheless, we believe the experimental approach to be a valid starting point. The present studies provided insight into a phenomenon hardly accessible...
through interviewing or field observation, because of its very nature. By the examination of consequences of variations in specific factors (e.g., degree of hedonic quality, need for justification), we revealed a mismatch between choice behavior and actual desires that is not necessarily obvious, not even to the participants themselves. Based on the present findings, future research will include more naturalistic and complex settings, product-centered case studies or real-world enquiries into the tension between what one wants and what one chooses.

Another potential drawback of the present studies is that they did not explore the respective relevance of hedonic and pragmatic attributes while actually using a product. But only the idea that people will be happier with a primarily hedonic product while product use turns the focus on the pragmatic in choice situations into a dilemma of the hedonic. Participants’ self-reports of affect in Study 1 and Study 2 already lent support to this assumptions. However, future studies need to examine people’s feelings related to actual product use later on. Besides laboratory studies, longitudinal (field) studies will help to explore the specific consequences of hedonic and pragmatic choice criteria for the evolution of the user-product relation over time.

Finally, future studies will explore person variables that could bear relevance for individuals’ general need for justification and/or the perceived justifiability of hedonic choice. For example, the cultural background or inter-individual differences in preferences for intuitive versus deliberative decision strategies (Betsch, 2007) may influence whether one considers a choice based on affect-laden, experiential, hedonic attributes as justified or not.

5.2. Conclusions

The major contribution of the present studies lies in an improved understanding of the Hedonic Dilemma as a phenomenon and justification as underlying factor. Besides, our studies have direct practical implications for HCI research. First of all, we recommend a certain degree of critical analysis towards studies that ostensibly (and sometimes naively) suggest that people care primarily for the pragmatic. Our studies demonstrated that these results could be biased by the ubiquitous power of justification. Given that yet hypothetical choice, obtained in an anonymous online survey, was affected by justification, this effect may be even stronger for user research in face to face settings. Taking justification into account, it is hardly surprising that studies regularly highlight the importance of pragmatic issues and downplay the hedonic (e.g., Helfenstein, 2010) – often meant as a slightly dismissive gesture towards current UX approaches.

Aside from the problem of justification, particular research methods or study procedures suggest a focus on pragmatic attributes and could thus lead to a bias towards the pragmatic. Standard usability testing, for example, is a valuable procedure to identify barriers to task fulfillment. But at the same time, typical usability questionnaires and the mere task-oriented setting implicitly suggest narrowing the focus on pragmatic and disregarding hedonic attributes. Accordingly, Hassenzahl and Ulrich (2007) found that user comments critically depended on the usage mode, i.e., whether participants had to perform a certain task with the product, or whether they were told “just explore and have fun with the product”. While the former focused on usability issues only, the latter provided a holistic evaluation of the product. The important point is that researchers must be aware of the respective focus that comes along with particular research procedures. If they are only interested in a products’ pragmatic quality, the task-oriented usability testing approach is all fine – as long as they do not jump to the wrong conclusion that users are only interested in a products’ pragmatic quality. An unbiased exploration of User Experience thus requires a research setting that does not take sides but introduces hedonic and pragmatic quality as equally accepted and justified, and leaves it to the participants to place their emphasis.

Beyond research, study results biased by justification are a suboptimal basis for successful product design. Despite being built on latest research findings, overly pragmatic products won’t be loved by customers. Designers, in turn, won’t understand why users do not appreciate what was built according to their “requirements”, and vendors will ruminate about their disloyal customers. We certainly recommend research-based design. However, companies will be well advised to regularly challenge the basis of identified “customer needs”. For example, any of the justification manipulations specified above (e.g., creating a gratification frame, creating a windfall situation, separate choice setting) could be a means to reduce the bias through justification in market studies. If set in contrast to a standard setting, this would even allow for a direct check of the impact of justification: will revealed preferences remain the same, or will hedonic products suddenly find more approval? Actively taking justification into account is also advisable for marketing campaigns: without the right frame, hedonic expenses lack justification, and customers hesitate to pay for experiential benefits. However, it is precisely this experiential value which enables emotional attachment, brand bonding, and, in the long run, a company’s success. Marketing campaigns could solve this dilemma by creating a frame that reduces the problem of justification (e.g., the gratification frame used in Study 4). Just like chocolate and perfume are promoted as something one deserves, like L’Oréal’s famous advertising slogan “Because I’m worth it”, similar mechanisms might work for advertising interactive products, and provide a possible solution for the difficulties arising from justification.

While appearing innocent at the first sight, the present research revealed that hedonic attributes have a “dark side”, too, i.e., their seeming irrationality and the resulting distrust in choice situations. We discussed the far-reaching consequences and challenges for users, designers, researchers, and vendors, and showed potential ways out of the dilemma of the hedonic. More important, our studies affirmed the irresistible attraction of the hedonic: whenever its choice is just about justified, users go for it, attracted by its potential for rich (User) experiences.

References