



Designing Moments of Meaning and Pleasure. *Experience Design and Happiness*

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While society changes its focus from “well-fare” to “well-being,” design becomes increasingly interested in the question whether it can design for happiness. In the present paper, we outline *Experience Design*, an approach which places pleasurable and meaningful moments at the center of all design efforts. We discuss reasons for focusing on experiences, and provide conceptual tools to help designers, such as a model of an artifact as explicitly consisting of both the material and the experiential. We suggest psychological needs as a way to understand and categorize experiences, and “experience patterns” as a tool to distill the “essence” of an experience for inscribing it into artifacts. Finally, we briefly reflect upon the morality implied by such experiential artifacts.

Keywords – Case Study, Experience Design, Positive Design, Responsibility, Well-being.

Relevance to Design Practice – Outlines the application of *Experience Design*, an approach which focuses on the design of pleasurable and meaningful moments inscribed into and mediated through the material (objects, technology).

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Introduction

The pursuit of individual happiness is central to life. Surprisingly, psychology did not study it extensively until only a decade ago. In 2000, Seligman and Csikszentmihalyi noted: “[P]sychologists have scant knowledge of what makes life worth living” (p. 5) and accordingly started *Positive Psychology*. Since then the empirical study of happiness has gained significant momentum (e.g., Kahneman, 1999, 2011; Lopez & Snyder, 2009; Lyubomirsky, 2007; Seligman, 2011).

Borrowing from Lyubomirsky (2007), we understand happiness as the “experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful and worthwhile” (p. 32). It, thus, has an *immediate, specific, affective* component that is experiencing many pleasant and only few unpleasant moments in different situations, and a more *long-term, global, cognitive* component of general life satisfaction (see subjective well-being, Diener, 2000). In other words, the pursuit of happiness requires the acquisition of positive experiences on a day-to-day basis and a more general assessment of life as positive and meaningful. Obviously, happiness can be understood as outside the control of individuals, a result of mere destiny, lucky circumstances, or genetic predisposition. However, studies show (see Lyubomirsky, 2007, for an overview) that a good part of happiness depends on activities and is, thus, variable. Through the deliberate and active engagement with the world, people can—at least to some degree—take control over their experiences and, thus, make themselves more (or less) happy.

This raises an exciting but challenging opportunity for Industrial Design, Product Design, and Interaction Design: Should it not be possible to “design for happiness” by enriching people’s everyday lives with positive experiences through

artifact-mediated activities? This challenge is two-fold: First, it requires a profound understanding of what a positive experience is and how it is created through “activity.” Second, it requires strategies to create and mediate experiences through “stuff.” The present paper explores this notion of experience-centered design of artifacts with happiness in mind. We start with a clarification of what an experience is, closing with a reflection about the relationship between experiences and the material. We then outline potential steps of *Experience Design* with the help of an illustrative case study. Finally, we reflect upon the morality implied by designing experiences.

Understanding Experiences: *From Happiness to Affect, Needs, Practices, and Things*

Experience is a concept with a rich history and meaning (Jay, 2005). Many interpretations and foci exist. Note that we are fully aware of this and do not intend to “colonialize” the term. Experience and *Experience Design* just come closest to what we actually attempt to convey.

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We understand an experience as “an episode, a chunk of time that one went through—with sights and sounds, feelings and thoughts, motives and actions [...] closely knitted together, stored in memory, labeled, relived, and communicated to others. An experience is a story, emerging from the dialogue of a person with her or his world through action” (Hassenzahl, 2010, p. 8). After going through an episode, people engage in meaning-making. They literally tell stories to themselves (and others; Baumeister & Newman, 1994). These stories contain the When, Where, and What, detailing a temporal-spatial structure and the content of the experience. In addition, people can tell whether their experience had been positive or negative (i.e., affectivity). Affectivity is a crucial ingredient of experience (Desmet & Hekkert, 2007; Forlizzi & Battarbee, 2004; Hassenzahl, 2010; McCarthy & Wright, 2004)—any experience has an “emotional thread” (McCarthy & Wright, 2004), and it is this affectivity which relates experiences to happiness.

However, to stop there would fall short of inspiring design. The question is not whether positivity is to be considered; the question is where the positivity stems from. We argue that it is actually the fulfillment (or frustration) of psychological needs that renders an experience positive (or negative) and personally significant, that is, meaningful. For example, in a study of positive experiences with technology (Hassenzahl, Diefenbach, & Göritz, 2010), a young woman confided this story: “I was on a short trip to Dublin. In the early hours, my mobile phone woke me up. My boyfriend, who stayed at home, had just texted a sweet ‘I love you’” (p. 353). This experience has many elements: a traveling woman, far away from home, a boyfriend, missing her in the early hours, and a mobile phone, providing the possibility to text a personal message. However, the meaning and positivity of the experience is derived from her feeling close to a significant other person—it is a story of love, separation, and longing. The experience fulfills the young woman’s psychological need for belongingness, togetherness, closeness—in short: relatedness (e.g., Epstein, 1990; Maslow, 1954; Ryan & Deci, 2000). In fact, Diener, Oishi, and Lucas (2009) offered “need and goal satisfaction theories” as one of the two major theoretical explanations for the “variable” parts of happiness (as opposed to the “stable” parts of happiness based on genetic predisposition).

It is beyond the scope of this paper to fully discuss the concept of psychological needs and underlying goal theories (see Hassenzahl, 2010, for an introduction and application to interactive products). This paper will merely consider

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psychological needs as a way to ascertain that an experience is positive and personally meaningful. Sheldon, Elliot, Kim, and Kasser (2001) concisely summarized need theories into a set of 10 psychological needs, and empirically demonstrated a relationship between need fulfillment and positive (negative) affectivity in life events. Hassenzahl et al. (2010; see also Hassenzahl, 2008; Partala & Kallinen, 2012) replicated this for positive experiences with technological artifacts. They found a correlation of .62 (and .58 in an unpublished replication with over a thousand cases) of intensity of retrospectively reported need fulfillment and positive affect.

Based on our practical design work in the context of Interaction Design, Sheldon et al.’s (2001) and our own studies, we narrowed the suggested set of ten needs down to a relevant set of six: autonomy, competence, relatedness, popularity, stimulation, and security (refer to Table 1). These six needs can be understood as potential “sources” of positivity, meaning—and ultimately—happiness, when fulfilled. Such a set at hand allows to further characterize many experiences by their specific “need profile,” revealing most and least salient needs. In fact, positive experiences are often marked by one especially salient need (Hassenzahl et al., 2010). Thus, needs provide categories of experiences, such as “competence experiences” or “relatedness experiences.”

Table 1. Overview of a set of needs suitable for Experience Design (Hassenzahl et al., 2010; Sheldon et al., 2001).

Need	Description
Autonomy	Feeling that you are the cause of your own actions rather than feeling that external forces or pressure are the cause of your action.
Competence	Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective.
Relatedness	Feeling that you have regular intimate contact with people who care about you rather than feeling lonely and uncared for.
Popularity	Feeling that you are liked, respected, and have influence over others rather than feeling like a person whose advice or opinion nobody is interested in.
Stimulation	Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and understimulated by life.
Security	Feeling safe and in control of your life rather than feeling uncertain and threatened by your circumstances.

Note, that there are other potential needs, such as physical striving, and a designer is always free to add or remove a need from the list. From our perspective, however, the proposed set of six satisfies a number of important requirements. First, all needs in the set contribute to the meaning and positivity of an experience. The good feeling resulting from helping somebody is a consequence of fulfilling a need for popularity through the practice of helping. Second, they are terminal, that is, they constitute an end rather than being instrumental. Helping is instrumental for the feeling of being popular. The feeling, however, is the true goal, whose validity cannot be questioned further. Everybody wants to be—at least to some degree—popular. Whether helping as a practice, however, satisfies a particular person’s need for

popularity may depend on, for example, the individual. Third, all needs in the set are different from each other. Pleasure derived from competence (e.g., parking your car in a tricky parking space) is different from pleasure derived from relatedness (e.g., having a chat in the supermarket).

Needs set the stage for *Experience Design*. Their actual fulfillment, however, is always related to more specific practices. Humans have their ways to feel close, to feel autonomous, to feel liked, to feel stimulated, to feel secure, or to feel competent. Feeling related through physical contact, for example, is made possible through the practices of handshaking, hugging, kissing, stroking, or the many ways of sexual intercourse. The difference between need and practice is important. While the former is universal—we more or less all strive for relatedness—the latter is a specific, situated action—depending, for example, on the person encountered, a handshake may just be more appropriate than a hug. Our notion of “experience” acknowledges this. We understand the practice embedded in an experience as the first important arena of design, because it provides the activity in context to fulfill a particular need. This in turn provides positive affect and meaning—two important ingredients of happiness.

There are many ways to shape practices to be more need fulfilling and, thus, more likely to lead to positive and meaningful experiences and happiness. One may read a book or talk to a good friend to glean some better, more fulfilling practices. Industrial Design, Product Design, and Interaction Design, however, typically focus on how designed “stuff” can create and shape experiences. This is the second arena of design.

To begin with, the difference between an experience and a thing is not straightforward. A hike through the Himalaya is experiential, but what is a flat-screen TV, an automobile, or a smartphone? “Are they possessions or vehicles for experiences?” asked Van Boven and Gilovich (2003, p. 1194). Consequently, one may think of any artifact as consisting of both: a tangible, material representation, and a set of experiences. A particular smartphone weighs 142 grams, has a 3.7 inch AMOLED display, an 8 megapixel camera with Carl Zeiss optics, all in a seamless polycarbonate body. One may marvel about this—or about the meaningful moments it creates, for example, when used to explore a new city, to stay related to friends and family, or to feel more secure in a park at 3 am. Thus, the material and the experiential are two sides of the same coin. The material is the tangible arrangement of technology; the experiences are the meaningful, positive moments created through interacting with this arrangement. However, if increasing happiness becomes the primary objective of an artifact, designers should shift some of their resources away from the material representation (the second arena) to the experiences created (the first arena; Hassenzahl, 2013)

This shift is not trivial. When referring to artifacts, designers, and consumers alike think primarily of the tangible, the thing. Both may contemplate intangible attributes, such as usefulness and beauty, but those attributes remain closely tied to particular material aspects (e.g., functions, color). From this perspective, design and consumption seems foremost to refer

to the physical, material world. However, Ariely and Norton (2009) noted that “a large portion of human consumption can be better understood by considering ‘conceptual consumption,’ psychological consumption that can occur independent of, and in some cases can even trump, physical consumption” (p. 477). Ariely and Norton use the example of understanding the choice for a particular chocolate chip cookie. From a material perspective, we may look for features to explain preference, such as the amount of fat or sugar the cookie contains, the number of chocolate chips, or its size. However, the experiential side of cookie eating might be a little more complex. Here is a list of questions possibly involved: “How many cookies have I had today?” “How does eating this cookie jibe with my weekly goal to lose two pounds?” “What will my co-workers think if I take the last cookie?” “I wonder if this cookie is organic?” “Are any of the ingredients in this cookie produced by exploited third-world workers?” (Ariely & Norton, 2009, p. 477). These questions give a hint of the experiential side of consumption, of all the stories good and bad possibly told through eating a cookie. But a cookie designer will quite naturally focus on dough recipes, chocolate quality, sweetness, and crunchiness. This is what seems to be under her/his control. If one gets the recipe right, the cookie will simply be irresistible. The stories around the cookie eating experience, though, are better left to marketing or to the consumers themselves.

An experience designer would turn this upside down. She/He would first think of the stories one can tell through the practices revolving around “cookies.” She/He might create a cookie, which looks like it is broken in half to instill the feeling in the cookie eater that they have only eaten one when they have actually eaten two already. She/He could create a cookie with a sugar gradient, so that every next bite becomes a little healthier. She/He could dream up a cookie box, which provides a good excuse for taking the last one out—and so forth. She/He could create the concept ready for psychological consumption along with the physical cookie. She/He could start with designing the stories to be told, and/or the experiences to be provided by shaping practices through the material representation of the artifact. Through this little example of the cookie, it is already apparent that thinking about the experiential side of an artifact casts a wider net than design typically does.

In sum, our approach to designing for happiness is to provide people with more day-to-day opportunities to engage in positive and meaningful, deliberately designed experiences. Experiences, which owe their positivity and meaning to fulfilling fundamental psychological needs and their substance to situated practices, deliberately designed and shaped through the material.

Designing Experiences: An Illustrative Case

In the following, we take a closer look at how to design an experience. It starts with an individual experience of feeling close to significant others (i.e., relatedness) and the suggestion to distill the essence of such a positive and meaningful experience into a pattern. The pattern allows to transfer the experience into a new

context, such as watching TV with the family, and to design a novel experience based on the knowledge about a happy moment captured by the pattern (design arena 1). We then take this a step further by discussing how to create and shape this experience through the material (design arena 2). While this section could be read as an outline of “methods” and a “process,” note that we are far from claiming such a status. To the contrary, we deliberately chose one of our own cases developed in collaboration with Samsung Electronics to give the description of the design process a preliminary feel. Its purpose is to serve as a focal point for the reader’s and our own reflection about a potential praxis rather than as a tried-and-tested prescription of how to design experience.

From Single Experiences to Patterns

Jenny and Jörg are our friends. They are among those people my wife and I would like to meet more often, and get closer to, but our busy everyday lives conspire against this. One day, we planned to lure them out. We suggested attending a concert by the Danish band *Veto*. Obviously, we love *Veto* and wanted to introduce the music to our friends. But we also wanted to experience this together as an opportunity to feel close, as a relatedness experience. But how? What would feel right? Surprisingly, this was not very hard to tell. First of all, we needed to pick a band, which all people involved may like—this sounds trivial, but is crucial. Meeting at the concert venue a minute before the concert did not seem a good idea. Thus, we picked up Jenny and Jörg with enough time to have a beer before the concert. And we wanted to see the support act as well. We planned for some ‘anticipation time.’ During the concert, we stayed together, but remained focused on what was happening on stage: an occasional glance, a shout, maybe some dancing side-by-side. Having a conversation during the concert was not only impossible because of the volume, it would have felt inappropriate. Saying goodbye and parting immediately after the last chord was strummed out felt wrong as well. There needed to be some time together after the concert—time to cool-off, to discuss the concert, to have a nightcap.

This little story is idiosyncratic and autobiographical. You may not go to see *Veto*, you may not have friends called Jenny and Jörg, you may not like beer. However, underneath all these details there is a more general structure, a pattern, detailing crucial aspects of a shared consumption if an intense feeling of relatedness is the desired experiential outcome. We understand “pattern” in a preformal sense as “recurrent phenomena or structures” (Dearden & Finlay, 2009, p. 58).

Let’s consider a more formal description of the story above: People engage in shared consumption, that is, they live through an event with others to feel related to each other. However, the communication and interaction during the event is limited. This is often due to the demanding nature of the event (e.g., requires full attention) or norms (e.g., not talking at the movies). Nevertheless, people feel that, overall, the experience becomes more meaningful by sharing it. Due to the restricted communication and interaction during consumption, people shift communication and interaction

to an anticipation phase (before) and a cooling-off phase (after). Without these phases, the consumption feels incomplete. Note that although interaction and communication during the event is limited, it can be still apparent. Typically, people use brief eye contact, mimics, gestures, laughter, or words to comment on the ongoing event.

The nature of shared consumption requires people to make an appointment. In fact, anticipation slowly builds up from the moment the appointment was made.

Communication and interaction in the anticipation and cooling-off phases often draw upon the event itself. Because of this, it is crucial that everybody consumes the same; thus, people will make sure that none of the group misses a part of the consumption (i.e., synchronization). Missing a part will hamper a person’s ability to be a part of the shared consumption.

The more demanding, interesting, confusing, or impressive the consumption was, the larger the necessity to talk it through in the cooling-off phase.

This pattern strips down the idiosyncratic and attempts to extract the structure of a “good” shared consumption. It suggests three phases (i.e., anticipation, event, cooling-off), important time points (i.e., the appointment, the beginning of the event), and some general rules or norms (i.e., don’t interact too much during the event, talk about the event in the cooling-off phase, don’t miss a part). We may come up with many different examples of events we have consumed with other people, from the movies to a play, or from speed metal to opera. However, when a really close relationship was felt, the related experiences may have featured most of the elements mentioned in this pattern (i.e., phases, time points, norms). Thus, while at first glance, experiences are perpetually new, idiosyncratic, and situated, we may remove some of these and expose, just below the surface, the essence of the experience—what it is that makes it meaningful and positive.

Patterns can have different sources. On one hand, they can be thought of as analytical summaries of empirically gathered positive experiences. Knobel et al. (2012), for example, asked people about worthwhile relatedness experiences involving cars, and repeatedly came across the practice of the motorcade, with people using, for example, walkie-talkies to blend the physically separate interiors of two cars into one. These experiences emphasized the importance of proximity between cars as a necessary pre-condition for this blending or the importance of sharing “atmosphere” rather than supporting talk. On the other hand, patterns can also be based on a few autobiographical experiences (see the Jenny and Jörg experience, Knobel et al., 2013, for an example, and Neustaedter & Sengers, 2012, for a recent discussion of a more autobiographical design) or taken from fiction (see pastiche scenarios, Blythe & Wright, 2006).

An obvious question is whether a pattern distilled from all these different sources is valid? First, we believe that truth is not the most central criterion. A good pattern is foremost plausible and resonates (Hassenzahl, 2010, p. 71). Resonance is a feeling of recognition and affirmation by the person who uses the pattern.

Think of your own positive and negative experiences with shared consumption. Does the pattern provide a clearer picture of what made one positive and the other negative? If yes, you might use it when designing. Of course, patterns can also be empirically validated. In an unpublished study, we created two versions of a similar story. It featured a group of friends going to a long awaited concert by their favorite band. Both stories fully adhered to the shared consumption pattern described above, except for a tiny detail. The proponent got a call in the middle of the concert that he had to take outside. In the “positive” version of the story, he came back just in time for a long-awaited, short guest appearance of a former group member. In the “negative” version of the story, he missed it. We asked people to read through the story and to vividly imagine being the proponent. We then asked them how they would have felt in the whole episode. One focus was their experience of relatedness. The pattern above states that “it is crucial that everybody consumes the same [...] Missing a part will hamper a person’s ability to be a part of the shared consumption,” thus, people confronted with the “negative” story should feel less related to the others compared to people confronted with the “positive” story. We measured relatedness with a questionnaire (Hassenzahl et al., 2010; Sheldon et al., 2001), using items such as “I felt close and connected with other people who are important to me” (Hassenzahl et al., 2010, p. 356). As expected, the mean experienced relatedness in the “positive” story ($M = 7.05$ on a scale from 1 to 9) was significantly higher than in the “negative” story ($M = 5.59$), $t(33) = 2.23$, $p < .05$. The tiny variation in story had a considerable impact on the intensity of the relatedness experienced. And on the felt positivity: While people in the “positive” story situation felt rather positive about the experience ($M = 7.11$ on a scale from 1 to 9), people in the “negative” story situation leaned towards the negative ($M = 4.31$), $t(33) = 4.16$, $p < .001$. Obviously, this still leaves many other parts of the pattern invalidated. But it demonstrates that, in principle, validation is possible.

Design arena 1: From patterns to experiences

We wrote elsewhere: “An experience designer is foremost an author of experience. Only after having outlined the desired emotional and cognitive content of an experience, the action involved, its context and temporal structure, [she] may start designing the ‘product.’ And then, each and every detail (content, functionality, presentation, interaction) has to be scrutinized according to its potential to create or destroy the desired experience” (Hassenzahl, 2010, p. 68).

An experience such as going to see the Danish band *Veto* with Jenny and Jörg is closely tied to context. Other people will report other experiences according to the type of events, the venues, or the number of friends. The pattern of shared consumption, however, captures the crucial elements all these experiences have in common. It describes the emotional and cognitive content, actions, the temporal structure, and conditions for a particular way of having a good time together. The experience designer may now transfer this pattern to a different context to

author a new experience. She/He relies on knowledge captured by the pattern, but nevertheless creates a new interpretation of this general theme. She/He tells a new story.

Let’s say you like to watch television with your children. This is not only about a particular program, but also about doing it together as a way to feel related. In fact, it was found that “80% of all TV viewing by people under 65 is done in the company of other people” (Brook, 2005).

Now, go through your practices of watching television together with the family and try to match it against the suggestions captured by the shared consumption pattern. Do you make an appointment to watch a program? Do you plan for phases of anticipation and cooling-off? Do you make sure that nobody in the family misses the beginning or parts of the show? If you do so, you and your family will certainly have meaningful, high-quality relatedness experiences through watching television. You have already managed to establish perfect practices resulting in positive, meaningful experiences. End of story for the experience designer.

However, if your practices of watching television did not match the suggestions captured by the shared consumption pattern, you can start to “rewrite” your current practices to better match the pattern. Sit down with your children, pick a program together, and mark the day and time on a large calendar. Or note it on a scrap of paper, “Every Sunday, 11:30 am, *Mouse TV*” (*Sendung mit der Maus*, a German educational children’s program, see <http://www.wdrmaus.de/>), and glue it to the TV set. Summon the family on Sunday, 15 minutes before the program starts. Sit down in the living room and talk a bit about the upcoming episode of *Mouse TV*. In which language will the trailer be? (It changes; it can be in Greek, Russian, French, English, Serbo-Croatian, or any other language.) Will it feature a new episode of *Shaun the Sheep*? Or a rerun of “Hair today, gone tomorrow”? Remember, how we laughed our heads off last time we saw this episode? Make sure everybody is there when the program starts. Supply juice and snacks to avoid someone having to travel to the kitchen and missing the best joke in Shaun. And after the program, take some time to talk through what you just saw.

All these suggestions will rearrange a given practice with the objective to create a family watching experience, which is fulfilling in terms of relatedness. This is already an act of *Experience Design*. We deliberately authored an alternative way of spending a Sunday in front of the TV with the family by drawing upon prior knowledge about a perfect shared consumption and transferring this into a new context.

This example illustrates two further crucial attributes of patterns. First, they are idealized. When collecting positive experiences to distill a pattern from, we focus on the aspects crucial for need fulfillment. While a pattern condenses all these aspects into a blue print for new experiences, it is likely to go beyond each single experience. It not only describes, but also prescribes.

Second, the pattern links a need with a particular context. While a psychological need such as relatedness is universal and abstract, the context of a concert or the home is particular and

concrete. The pattern itself is in between both. On one hand, it clearly refers to a need, that is, it captures a particular practice capable of fulfilling this need. On the other hand, its application is constrained by the situation. Obviously, shared consumption requires an event to share; it requires friends to share with, and so forth.

So far, we have designed an experience by distilling a pattern (shared consumption) from an autobiographical experience (an evening out with Jenny and Jörg), and used the insights captured to improve a family’s TV watching experience. This of course is only half the story for *Experience Design*. As laid out in the introduction, we set out to design artifacts which consist not only of experiences (arena 1), but also of a material configuration to create and mediate these experiences (arena 2).

**Design arena 2:
Shaping experiences through the material**

In the example of the TV watching experience, the family is largely left to their own devices to implement the new practice. This is fine, as long as people are aware of the practice. If not, somebody needs to tell them—some get their inspirations for changing practices and resulting new experiences from friends, others from books or Web sites. In all those cases, individuals must adopt an active role and deliberately search for ways to improve their happiness. Some will never even have the idea to do so.

Now, the material has a curious power. As philosopher Verbeek (2011) puts it: “When technologies are used, they inevitably help to shape the context in which they function. They help specific relations between human beings and reality to come about and co-shape new practices and ways of living” (p. 4). The material inevitably shapes the “dialogue of a person with her or his world through action” (Hassenzahl, 2010, p. 8). The material is able to tell a story, a story without words, a story told through interaction with the material—a “material tale” (Dunne, 2006). Designing an artifact can thus be summed up as creating a material representation able to constrain context and shape action, emotion, and cognition in line with the envisioned experience. Note again that experiences are understood as an integral, but intangible part of the artifact, and not as a by-product.

In our example, it is only natural to consider the television set itself as the material representation shaping our experiences. Let’s compare the way a regular TV structures the family watching experience (Figure 1, upper section) with suggestions captured by the “shared consumption” pattern (Figure 1, middle section).

The figure indicates a number of mismatches (A, B, C, D):

- (A) A regular TV does not support explicit appointments. While a modern electronic program guide (EPG) in principle provides the according functionality, it is always presented as a program guide rather than as the joint, deliberate action of selecting something to watch together.
- (B) Typically, a TV is switched on a little before the show to avoid missing its beginning. However, the running program will hinder joint anticipation. Instead of talking about the upcoming show, the family plunges into the preceding program, and people find themselves watching without much opportunity to talk.
- (C) For a proper relatedness experience based on shared consumption, it is important that everybody involved shows up in time. A regular TV offers no means to remind people of their appointment, that is, to synchronize them.
- (D) Mismatches similar to the ones in the anticipation phase are also apparent in the cooling-off-phase. Typically, the TV is either directly switched off or people go on watching. The former feels abrupt and at best leaves the cooling-off completely to the people. Most likely the family just scatters to the four winds. The latter prevents the exchange of thoughts and feelings. The next exciting show is at the ready – who could resist?

This analysis reveals how the TV itself not only fails to support a relatedness experience modeled after the shared consumption pattern but prevents the anticipation and reflection that is absolutely crucial for feeling related.

All this is not too hard to redesign (see Figure 1, lower section). Consider the following vision of a *Family TV*:

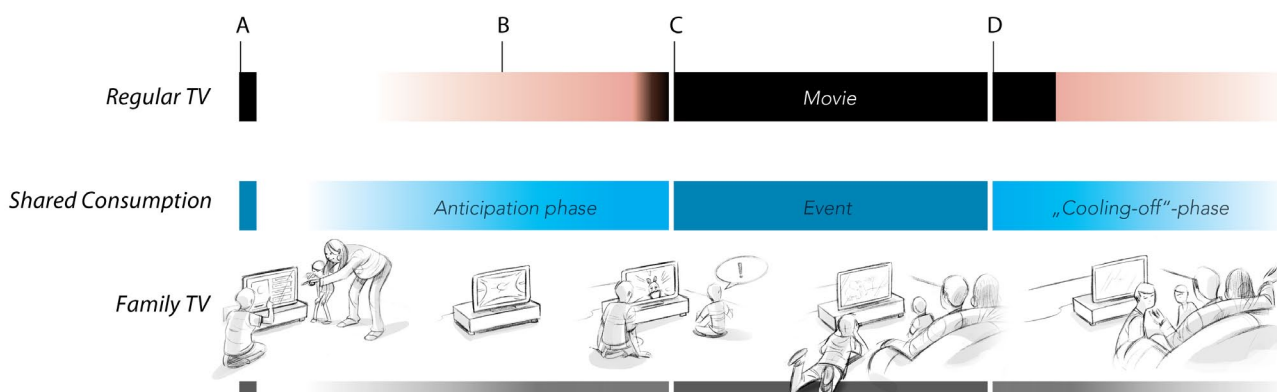


Figure 1. A comparison of the structure of a watching experience suggested by a regular TV (upper) by the “shared consumption” pattern (middle) and the *Family TV* (lower) (refer to text for further information).

“Oh daddy, we want to watch *Mouse TV* on Sunday. Pleaaaaase!” Father and daughters select the program from the electronic program guide (EPG) and make it a fixed weekly appointment. “Done! I can’t wait ‘til Sunday.” 11:10 on Sunday. Magically, the *Family TV* begins to glow. This is accompanied by soft, short, inviting sounds. The children already know what this means: The *Mouse* is about to start. They call out for their parents and gather in front of the TV. The parents join them. It is 11:15. The TV fades in a blurred picture of the running program. On top of this, the EPG presents information and pictures about the upcoming program. “Hey, *Shaun the Sheep* is in this episode. Do you remember the last one? Hilarious!” Only 30 seconds left before the program starts. The TV switches to a plain view of the running program and displays a countdown. One daughter is still in the bathroom. “Come on,” her sister yells, “Hurry! You’ll miss the start.” The family enjoys the show. “Ohhhhh, it’s already over.” “Ah, come on, this was good. Hey, see!” The mother points at the TV. While watching, the TV’s inbuilt camera took pictures of the family on the sofa. Based on their facial expressions, the TV presents those little snippets from the program, which made them smile and frown together with pictures of their silly faces. A little later, the TV pushes some further background information about the program gathered from the broadcaster’s website. After 20 minutes, the picture slowly fades out. The TV glows for a while and then switches itself off. The family is not even aware of this. They are still discussing the things they just saw.

This design may not be complete and certain design choices, such as the facial recognition-based presentation of snippets from the program, may be questionable. However, to our mind it shows how experiences can be shaped through the

deliberate and considerate design of the material. As an artifact, the resulting *Family TV* clearly comprises both: a material representation, that is, the tangible configuration of technology, and the intended, intangible experience “told” through the tangible. The *Family TV* reconfigures the context to be better in line with the intended experiences (e.g., fading in and fading out), and provides cues to engage in certain actions (e.g., to remain in the living room and to talk about the program). The intended experiences determine all design choices concerning the material. The mere fact that the experiences are deliberately designed to be mediated by a particular material configuration makes the experiences and the material inseparable—two sides of the same coin. Together, they are the artifact.

The *Family TV* is only one possible derivative of the knowledge captured in the shared consumption pattern. We further expanded on this to make TV watching over a distance more of a relatedness experience—the *Be-Near-Me TV* (Figure 2).

The scenario is: People make an appointment to watch a movie together over a distance. The *Be-Near-Me TV* initiates the connection and provides a large image of the other’s living room captured with a built-in center camera. The running program is only visible in the background (see Figure 3). This creates the space to talk and to watch everybody gathering in front of the TV, with pretzels, chocolates, wine, and beer ready to hand. The moment the movie begins, the screen configuration changes. The movie comes to the fore; the view into the living room becomes smaller and is moved to the border of the screen. It is captured by a lateral camera to increase the impression of observing the friends rather than looking them into the eye (see Figure 3). This creates the feeling of sitting together in a room, transfixed by the movie, only occasionally peppered with smiles, witty remarks, or



Figure 2. The *Be-Near-Me TV* (refer to text for further information).

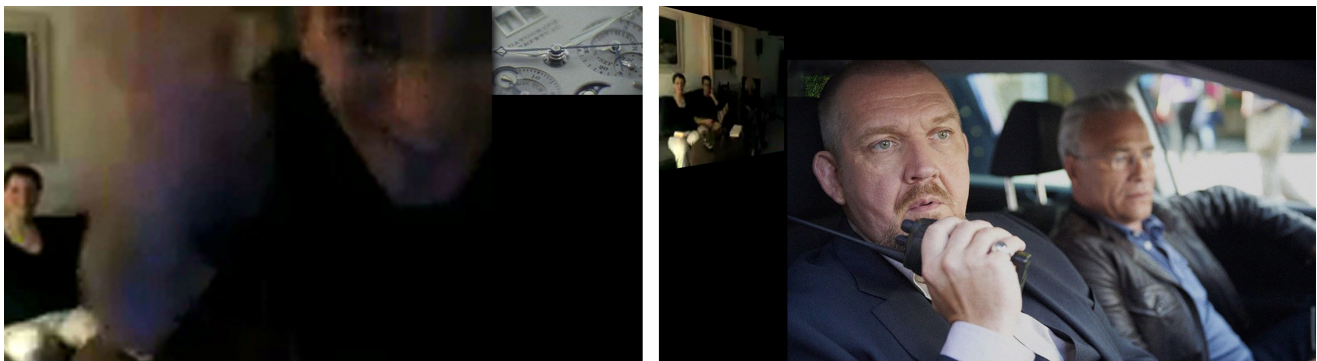


Figure 3. With friends in the fore and the running program in the background (anticipation and cooling-off phases); with the running program in the fore and the friends in the background.



Figure 4. Four pairs of video stills from a tryout of the *Be-Near-Me TV* (Source: Authors).

little cries of horror—depending on the movie. When the movie is over, the configuration changes back to the initial, frontal view of the other’s living room. However, the camera’s focus is more close-up to facilitate talking by creating a situation even a little more intimate than the anticipation. This sets the stage to cap the evening nicely.

The second author of this paper built a functional prototype based on *Skype* and tried it out to get a first-hand impression about potential material configurations and related experiences (another example of autobiographical design, Neustaedter & Sengers, 2012). Figure 4 shows video stills of emerging moments: Saying “hello” to each other and raising glasses in the anticipation phase, giving a great moment the thumbs-up, and cooling-off together.

Family TV and *Be-Near-Me TV* highlight that a pattern is not identical with the artifact itself, or its experience. We can remove the idiosyncrasies from the autobiographical experience of a good night out with Jenny and Jörg, as described above, and make it into a pattern. This pattern is more general than the particular experience and can be applied to different contexts, resulting in different artifacts (i.e., material and experiential). While differing in details, at the same time both TVs encapsulate practices of how to make TV watching a little more meaningful and pleasurable – they provide moments of happiness.

Some remarks

In the *Family TV* example, the pattern was used to improve the relatedness experience while watching TV. Starting from the observation that most TV use is social, shared consumption highlights reshaped the experiential part of the artifact, thereby implying changes in its material representation. Enabling new or “rewriting” existing experiences through slight changes in the material representation of an artifact is the most obvious strategy of *Experience Design*. Through this, TVs, cars (Juhlin, 2010; Knobel et al., 2012), stereo systems (Lenz, Diefenbach, Hassenzahl, & Lienhard, 2012), or any other “technology” can become more experiential, more meaningful, and can provide

happiness. Note that in our view experiences already existed before these materials were submitted to *Experience Design*. However, they were not explicitly inscribed into the artifact. Only when deliberately designing the experiential portion of an artifact by addressing a psychological need and a meaningful related practice (arena 1) does design become *Experience Design*, that is, design becomes design for happiness.

While it is often worthwhile to build new experiences into existing material configurations through small changes, we actually prefer a different approach. We believe the experiences should come first, and the material should be chosen solely for the benefit of the experiences (Hassenzahl, 2013). A review of artifacts designed to create a relatedness experience (Hassenzahl, Heidecker, Eckoldt, Diefenbach, & Hillmann, 2012) showed that some of the artifacts make use of existing material configurations (e.g., photo frames, rings, garbage bins, desk lamps, slippers), while others invent new configurations, such as Strong and Gaver’s (1996) classic feather in a glass cone, which starts to float when the partner who is away activates it from her/his distant location. In all these cases, however, the experience of relatedness was the starting point and existing material configurations were only used because of their power to shape action, and to evoke thoughts and emotions in relation to the envisioned experience. In sum, we encourage an approach to design that puts need fulfillment and according meaningful experiences into the fore. Thinking of experiences and needs *before* the material allows to broaden the design space, that is, to innovate, but always with a sound grounding in human practices, experience and, thus, happiness.

The Morality of Artifacts

We have so far provided some arguments and suggestions of how to design the experiential side of artifacts more deliberately. What we have not yet discussed is how to select the experiences that we actually want to inscribe into our artifacts. With the present approach, we could just as well have picked autonomy (or a shrewd version of popularity) as the experiential objective for the

TV by providing a remote control which can be operated by the father only. He would definitely enjoy his power—so why bother with a cheesy *Family TV*, when there could be a *True Men TV* instead? It's like dancing the tango versus moshing. Why hurt yourself on the thorns of the rose clenched between your teeth, when there can be true bruises, blood, and sweat in a mosh pit?

The first step in answering this is to accept responsibility. Verbeek (2011) explained how our modernist understanding of things deprives it of any morality. The material can't have any morality, because it has no intentions of its own, makes no choices of its own, and is inanimate. The gun is neutral; it is people who pull the trigger (or not). But as laid out before, the material will inevitably create certain experiences (i.e., actions, feelings, thoughts). Whether we want them or not, experiences are a part of the artifact. A gun, for example, encapsulates all kinds of experiences revolving around themes, such as “feeling safe from threats” (security) or “having power over others” (popularity). It structures reality by stating that the world is dangerous (it's a jungle out there), and that the practice of robbing others at gunpoint may be an option. There are plenty of examples for this. Take a central locking system that locks the car automatically when the motor is running. “It feels safer,” people say, and when we point out that Munich is hardly the place where cars are hijacked at traffic lights, they only shrug. Or take the example of an App made for women to feel safer in a park at night, which was related to the authors by Yannika Ehde and Jessica Enevold from Lund University over a beer. This App may come across as quite a practical offer, at the same time it restructures (some may say distorts) reality, such that parks at night appear especially dangerous to women. Even when in reality the number of muggings is declining and men are just as likely to become victims of random beatings. Hence, the material is not innocent either. It tells a story, whether we want it to or not.

Experience Design argues in bringing these stories, the experiential side of artifacts, to the fore. It does not relegate experiences to the appropriation of the user, but inscribes them into the material. We “explicitly try to 'build in' forms of mediation considered desirable” (Verbeek, 2011, p. 91) into our artifacts. Verbeek (2011, p. 99) further shows that it might not be as easy as a simple scripting of experiences through the material. While the designer delegates actions, feelings and thoughts to the artifact by inscribing experiences into the material, the user still appropriates the artifact in potentially unforeseen ways. Thus, an artifact's materiality may never fully determine its experiences—a feature expressed by some through insisting on calling it “designing for experiences” rather than “designing experiences.” From the perspective of the authors, the artifact already becomes subject to moral analysis through the mere intention to realize certain experiences. Beyond that, there seems no reason why designers should not try to anticipate user appropriation as well and include it into their analysis. Whether they accept this role or not, designers are “practical ethicists, using matter rather than ideas as a medium of morality” (Verbeek, 2011, p. 90). As designers, we must take the responsibility.

But what is a morally correct experience? (Note that this is extremely difficult to answer, and the authors do not claim any definitive answer.) However, we have placed *Experience Design*

in the context of happiness. Through encapsulating opportunities for need fulfillment into artifacts, we ultimately hope to improve individual happiness. We neither focus on increasing the revenue of a global manufacturer of Smartphones nor do we intend to solve the world's health or hunger problems. Individual need fulfillment, meaning, and pleasure are brought to the fore. We should, however, provide need fulfillment in a “sustainable” way. Stimulation, for example, is based on the ever new, and thus implies short-lived consumption. Security, however, relies on rituals. Once established by an artifact, this artifact may stay there forever—treasured, groomed, and repaired. Competence, in contrast, highlights the deep involvement with an artifact, and the investment of time. And while we evolve, for example, our baking skills, we cannot go consuming elsewhere. Evolving our driving skills by drifting on the A5 motorway between Frankfurt and Darmstadt, on the other hand, may put other people in danger, and is, thus, questionable. In short, artifacts (i.e., experiences and material) should at least be scrutinized according to their emotional durability (Chapman, 2005) and social acceptance. The latter highlights an important further issue. Just as policy making is a matter of public debate, the experiences inscribed into the material, that is, design, must become a more democratic activity (Verbeek, 2011, p. 96). So far, these debates are often confined to specific fields, such as Persuasive Technologies, Gamification, or Sustainable Interaction Design (e.g., Bogost, 2011; Brynjarsdottir et al., 2012; Verbeek, 2011). This is too limited. Experiential consequences are ubiquitous, even in seemingly harmless things, such as chairs, tables, or baking pans. *Experience Design* acknowledges this. It makes experiential consequences of material configurations a part of the artifact and thereby a subject in need for conscious design efforts and moral justification.

Conclusion

Hopefully, a desire for meaningful positive experiences created and shaped through the material will replace our obsession with ownership and efficient output. It is not primarily about, for example, *Mouse TV* in high definition, with stereo surround, but about watching the *Mouse* in a meaningful, satisfying way. Everyday activities, such as watching TV, are potential vehicles for all sorts of experiences, only bound by the imagination of the designers and users themselves. Through addressing everyday activities from the perspective of happiness rather than from the perspective of output opens up many possibilities to make life more meaningful.

The present paper presented an outline of how to conceptualize an experience and the material, and suggested how to distill meaningful experiences into patterns, and to use those patterns to inscribe meaning into materials to create new experiences. Obviously, meaning and, ultimately, happiness are grand words, which require further qualification. However, we found psychological needs as potential sources of positive feelings, meaning and—ultimately—happiness especially helpful. They act not only as guides for aligning design decisions concerning experiences and materials, but also as inspirations—as ways to innovate through experientially-grounded possibilities rather than efficiently solved problems (Desmet & Hassenzahl, 2012).

For a designer used to manipulating the material, designing intangible experiences fueled by need fulfillment may appear difficult at first, but there is no way around it. Experiential consequences of things are inevitable. They do not simply vanish by excluding them from design or keeping them vague. They will materialize, no matter whether the designer wants them to or not. By leaving them implicit rather than at least vaguely thinking about them in the first place, they will most likely not materialize in the way the designer hoped for. And ultimately there is responsibility even for unintended experiences. We cannot simply escape responsibility by saying “I never knew,” and blaming consequences on users' appropriation. Today, we have the conceptual tools to understand the relationship between designer, user, “stuff,” experiences and happiness—and we must use them for good.

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