Artefactual emptiness - on appropriation in kansei design

Pierre Lévy

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2020

ARTEFACTUAL EMPTINESS
ON APPROPRIATION IN *KANSEI* DESIGN

Pierre LÉVY

Eindhoven University of Technology, The Netherlands, plevy@tue.nl

ABSTRACT

Appropriation is the phenomenon by which an artefact is adapted for a specific use, distinct from the original design intention. By essence, it cannot be planned by design. However, it is a major aspect in the experience one may have in interaction with an artefact, as it leads to the feelings of ownership and to the effective situatedness of the artefact. It is therefore significantly contributing to designing for sustainability and for the everyday. This paper intends to address how design can consider the possibility of appropriation. Taking a *kansei* design approach, inspired from the nishidian philosophy on perception, we introduce the notion of *artefactual emptiness* as a space provided by design and left to the user to adapt the artefact for its integration in the habitability of the world. This space is made accessible and inviting by involving irregularities, suggested by Yanagi Soetsu as a means towards beauty, and implemented in design through micro-considerations and micro-frictions. *Artefactual emptiness* leads to beauty in experience, expected from a *kansei* perspective and made possible by *kansei* design. This work on appropriation through *kansei* design also leads to question the attention appropriation should have in other domains of *kansei* research, especially *kansei* evaluation. It calls for finding ways in *kansei* research to evaluate over time the *kansei* effect of appropriation on experience.

Keywords: appropriation, emptiness, design, everyday, kansei

1.   INTRODUCTION

Considering the current global issues our societies face (United Nations, 2015), and especially the ones related to sustainability, design is ought to extend its considerations on the relation between the user and the artefact to the evolution of this relation. The question raised by sustainability is not only the perception and the appreciation of an artefact "at the first sight", but more importantly the appreciation over time.

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

If the impression at the first sight has been for a long time a complex challenge at the core of *kansei* research, because of its contextual, cultural, and temporal nature, the appreciation over time is equally complex and possibly more challenging. The way an artefact enters the daily life of a person is based on a process of appropriation that remains a clear challenge for design as this process results in a difference between the design intention and the way the artefact is actually used.

In this paper, we intend to open up this challenge by addressing it from a *kansei* design perspective. After specifying briefly our approach in *kansei* design, we will address the challenge posed by the phenomenon of appropriation to design. Reframing it from a *kansei* design perspective, we will inquire the notion of *artefactual emptiness* as a concept to address appropriation, in a way that the designer may provide a space that invites the possibility of beautiful appropriation through *irregularity*. We will then conclude by reconsidering the challenge of appropriation in *kansei* design, and in *kansei* research at large.

2.   *KANSEI* DESIGN

Despite numerous attempts to explain *kansei* (e.g., (Harada, 1998; Lee et al., 2007; Lévy & Yamanaka, 2006; Lokman, 2010; Nagamachi, 2006; Schütte, 2005)), this notion is not yet described by a commonly recognised and stable way. Although being aware of the disputable nature of the following description, we propose here to provide such description that we consider contributing to the question of what *kansei* is, as well as fitting to the way *kansei* is considered in this paper and in the related research.

As one of the most important concepts in the nishidian philosophy on perception, *acting-intuition* (Nishida, 1987) implies a mutual influence between the world and the subject of which it is a part. As Wilkinson (2009) suggests: "We must experience the world in order to act on it. Just as he [Nishida] insists that the practical reason is deeper than the theoretical reason, he also insists that our natural state of being in the world is not contemplative but active, an aspect of the constant mutual interaction between being and the world." This mutual and constant interaction between the being and the world is of course essential, as well as also ineluctable.

This perspective can be clarified with an example. The recent development of action or simulation video games has considerably improved the potential level of the player's engagement in the game, notably thanks to so-called immersive technologies (e.g., virtual reality), and to theories on engagement (e.g., flow theory (Csikszentmihalyi, 1997)). The level of engagement is such that the psycho-physiological reactions of the players show a strong tension on the part of the engaged player. However, there is still a major difference between, for example, a fighting game on a virtual battlefield and a "real" fight on an actual battlefield. The earlier can be completely interrupted at any time, not the latter; the risk of dying is virtual in the earlier (and one often has several lives, after that we can start again!), not in the latter. In other words, the

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

combat video game, as immersive and real as it may seem, allows for an experience that can be suspended. The experience of a real fight is ineluctable: no switch can be used to remove oneself from the experience at any time, no matter how terrifying it may be. And this ineluctability is not without consequences on the experience itself. The experience of the ineluctability of an experience, that is a form of meta-experience, significantly influences the affective aspects of the experience. We call *kansei* the affective dimension of this meta-experience. Thus, *kansei* denotes the affective relationship to the world as experienced, reinforced by its ineluctability.

Following on this perspective, taking its roots in the Japanese philosophy elaborated by School of Kyoto, and therefore related to phenomenology, *kansei* design focuses on the active relation to the world as described by the notion of *action-intuition*, and addresses how *kansei* is influenced by and influences the design of artefacts.

This aspect demands to clarify two types of *kansei* design that can be found in the literature. The first type focuses on the production of artefacts and proposes design methods and models to optimize design processes (e.g., (Bouchard, 2010)). We call this type *indirect kansei design* as it is based on indirect psychological theories (Lévy, 2014). The second type focuses on the relation between humans and artefacts, and on the in-between space (e.g., (Duel & Lévy, 2015)). We call this type *direct kansei design*, as it is based on direct psychological theories (Lévy, 2014). This research fully subscribes to direct *kansei* design, which will be designated as "*kansei* design" in the rest of this paper.

Kansei design draws on Japanese philosophy and culture to explore and to understand the affective relationship to the world and its ineluctability. It aims to provide a practical perspective for designing, towards the creation of artefacts that aims to the emergence of beauty in interaction with these artefacts and in the resulting experience. This perspective is meant to be coherent and holistic at sensory, perceptual, experiential and contextual levels, and essentially rich in terms of the *kansei* descriptors determined during the creative process (Lévy, 2018).

Consequently, the research related to *kansei* design is a practical research, i.e., contributes to the practice of design, inspired by Japanese philosophy and culture insofar as these allow us to grasp the aesthetics in interaction of the being-in-the-world.

3.   APPROPRIATION AND DESIGN

3.1. Appropriation

The notion of appropriation can be first defined as the action to adapt an artefact to a specific activity. The term *adaptation* suggests that such action is not as to the designer's intention (i.e., an artefact used as intended by the design is not the result of an appropriation). People adopt artefacts based on their potential utility and performance in the situation of the interaction, often away from the designers' intention and projection of the situation of use. This concerns tangible

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2020

designs (e.g., a piece of folded paper used to stabilize a wobbly table, a knife used as a screwdriver) as well as digital technologies (e.g., sending notes to one's self by email). Dix (2007) proposes three major aspects to consider for appropriation:

- Situatedness – Interacting with an artefact, either tangible or digital, takes place in an environment. Therefore, comprehending the interaction and the appropriation cannot be done ignoring the qualities of the environment.

- Dynamics – Expectations, environments, values, ways of doing change over time and over space, and so does appropriation. Therefore, design should focus on the dynamics of change, rather than on the stability of a situation snapshot.

- Ownership – Appropriation leads to the emergence of ownership, translated possibly as a feeling of control or mastery, or a feeling of doing "my own way". This leads also to a greater feeling of engagement in the interaction and in the related activities.

Carroll et al. (2001) propose as well a technology appropriation model, distinguishing the *technology-as-designed* (as envisaged by its design and then produced), the *technology-in-use* (as actually used by the user(s)), and the *appropriation process*, as being the emergent process of change leading to a satisfactory (in case of appropriation) or dissatisfactory (in case of disappropriation) use. In this model, technology (and the related innovation) is therefore transformed by the process of appropriation, from *technology-as-designed* to *technology-in-use*, considered as two distinct concepts.

3.2. Opening for appropriation in design

Although this approach is valuable to analyse and to make sense of the notion of appropriation, it also indicates that the ambition to establish a practical understanding of how *technology-in-use* can be handled by design is a lost battle. The process of appropriation is indeed playing here a role of distanciation between *technology-as-designed* and *technology-in-use*, and therefore blurs any possibility of accurately considering *technology-in-use* while designing. Consequently, this paper intends to focus on the practice of design and to suggest a way to consider the possibility of appropriation through design.

For design, by offering action possibilities wider than the core design intentions, artefacts can be used in many ways, which make appropriation possible. The phenomenon of appropriation should not be considered as a design failure, but rather as an opportunity delivered through design. Appropriation takes place when the artefact is getting distant from the design intention and closer to the user's sensemaking of it in a situated way. In other words, the process of appropriation enables the integration of the artefact in the habitability of the world (Findeli et al., 2008) from the eyes of the user, and contributes to the process of domestication and quotidianisation (Bégout, 2010; Lévy, 2019). The notion of quotidianisation is described as "a process of material organization of the uncertain world in a frequented environment, the work of overcoming the original misery of our condition by creating familiar forms of life" (Bégout,

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

2010, p. 313). It is a way the new and the unfamiliar integrate the familiar and the already domesticated. Its outcome is the constituents of the everyday life, making things usual and liveable with peace of mind. However, it has been shown that the everyday is a challenging topic in design: "The difficulty in approaching the everyday in design lies first and foremost in the fact of its familiarity, in its apparent obviousness, and therefore in its difficult questioning and analysis. Design needs to find in the everyday something to explore, to question, and to shape." (Lévy, 2019). Providing means for design to consider appropriation in its own processes is therefore a key to improve the consideration of the everyday in and through design.

4.   ARTEFACTUAL EMPTINESS

4.1. The case of muji

Such perspective on the everyday has been the focus of Mujirushi Ryohin (also known as *muji*), that designs and retails a large variety of products, from pens to houses, as well as clothes and food, while still keeping a coherent visual identity. Kusunoki and Seo (2017) describe them as "simple, ordinary, and empty", which actually relate to the first three terms proposed by Hara as the concepts that have shaped *muji* over time (2015): nature, house, emptiness, water, and earth. *Simplicity* is both functional and aesthetic, and can be related to the notion of *nature* (*shizen* in Japanese – 自然) which denotes the primary, possibly exclusive, expression of what is essential in the artefact and in its use. *Ordinary* indicates that the products are usual and useful for everyday life. They are therefore part of a wider environment considered as a field of possibilities. It also goes back to the idea that *muji*'s products are not signed, but rather are a base, a vehicle giving the user the possibility to develop his own lifestyle with these products. The notion of *house* (*ie* – 家) thus invites the notion of habitability by these artefacts and the users in a shared space, and structured by a lifestyle. Finally, the notion of *emptiness* (*kara* – 空) describes the idea that the artefact is such as to give the user a space of possibilities to develop his own way of interacting with it. The artefact provides possibilities and does not impose itself.

These three notions, describing the design project of muji, especially the notion of emptiness, seem to align with the project of quotidianisation of artefacts, and therefore with the attention design may have both for the everyday and for appropriation. Emptiness denotes the idea that the artefact is such that it gives the user a space of opportunity to develop his or her own way of interacting with it. The artefact opens up possibilities and does not impose itself. It is in the interaction with its emptiness, i.e. thanks to the *artefactual emptiness* that quotidianisation can take shape (Lévy, 2018).

4.2. Emptiness as a space for appropriation

We argue that the notion of emptiness is relevant to address how we can consider the possibility of appropriation through design. First, the emptiness provides a space that enables the user to adapt the artefact through interacting with it. Second, considering further the notion of

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

emptiness in Japanese philosophy, especially in relation with the work of the School of Kyoto on the notion of *śūnyatā* (This term has been translated in Japanese by either *kū* (空) or *mu* (無), themselves translated by emptiness or nothingness. While discussing the distinction between these notions is beyond the scope of this paper, we use here the term *emptiness*, more adequate to address what design considered as a space), this notion suggests that everything comes to exist in an interdependent premise (engi – 縁起), which implies that no phenomenon can be independent and is only by its relation to other phenomena. Emptiness invites to consider first and foremost relationships between things, rather than to the things themselves. These relations are social, artefactual, temporal, etc.

4.3. Emptiness for the everyday

We have proposed a way design can involve the possibility of appropriation in its practice. Including emptiness in the artefact enables for such appropriation. However, if the actual aim is to open up the practice of design for appropriation, then we should also question the possibility of embracing appropriation through design. The difference between considering and embracing appropriation is significant. In the earlier, design would simply make appropriation possible, with no clear value for it. If we do value appropriation, then embracing it requires to invite for it through design.

On this topic, Dix (2007) notes the oxymoronic nature of this intention: "plan for the unexpected". Designing for something that diverges from the intention of the design, implies that it should remain unexpected and therefore implanifiable. An attention on a similar oxymoron is found on the notion of irregularity (Lévy, 2019; Lévy & Yamada, 2017), inspired from the work of Yanagi Sōetsu's critic on (im)perfection (Yanagi, 1989). According to him, perfection is synonym to final and static. It prevents openness and freedom, which he associates to beauty. However, freedom should not be the obliged of beauty, as it would then be an illusionary freedom. This way, Yanagi overcomes the dualism between perfection and imperfection, proposing the notion of irregularity, "by default of a better word", to address such beauty when something remains unexplained, which cannot be planned.

Such beauty can be found for example in the textile design work of Minagawa (Minä Perhonen, 2005), both in the expression and in the gesture domains. The irregularity created by Minagawa is done through a specific use of the embroidery machine. The designer conceived patterns that demand the machine to reach and possibly go beyond its mechanical limits (such as stitching numerous times at the same place, so that the needle cannot go straight through the textile anymore and has to bend to pursue its course). At these limits, provoked by design, the machine creates unpredictable irregularities, source of beauty in the sense of Yanagi, and well perceivable in the outcoming artefacts (embroidery patterns).

The value of such beauty is that it finds its essence in the irregularity, which leads to the unexpected, and invites for exploration in a space that can be arranged. In other words,

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

irregularity invites the user to arrange and appreciate the artefactual emptiness. Designing with irregularity supports such ambition (Lévy, 2019).

5.   CONSEQUENCES FOR *KANSEI* DESIGN AND *KANSEI* RESEARCH

In this paper, we proposed a way to look at and to address through *kansei* design the phenomenon of appropriation. The artefactual emptiness and the irregularity allow us to consider and to conceive the *technology-in-use* no longer as something distant from the *technology-as-designed*, but as a constituent of the *technology-in-use*. The duality between *technology-in-use* and the *technology-as-designed* is then overcome. However, there is still a need to qualify this artefactual emptiness, i.e., to topologize this space in order to guide the designer in the creation of possible spaces. The notions of micro-considerations, micro-friction and (es)sential details (Lévy, 2019) provide hints for such endeavor.

Finally, focusing on appropriation in *kansei* studies leads as well to discuss the relevancy of considering appropriation in the broader context of *kansei* research, especially in *kansei* evaluation. Is appropriation relevant in *kansei* evaluation? If so, how does this field resist to the integration of appropriation into design processes, whether these processes belong to *kansei* engineering, *kansei* science, or *kansei* design? Paying attention to such phenomenon may readdressed fundamentals in these fields of *kansei* research. Determining a method to measure over time the *kansei* effect of appropriation can be a way to study *kansei* aspects of the everyday life through *kansei* science and *kansei* engineering.

REFERENCES

Bégout, B. (2010). *La découverte du quotidien*. Éditions Allia.

Bouchard, C. (2010). *Modélisation et computation des processus cognitifs et informationnels en conception amont: Une investigation chez les designers et les concepteurs*. Institut National Polytechnique de Grenoble.

Carroll, J., Howard, S., Vetere, F., Peck, J., & Murphy, J. (2001). Identity, Power And Fragmentation in Cyberspace: Technology Appropriation by Young People. *ACIS 2001 Proceedings*. https://aisel.aisnet.org/acis2001/6

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Basic Books.

Dix, A. (2007). Designing for appropriation. *Proceedings of the 21st British HCI Group Annual Conference on People and Computers: HCI...but Not as We Know It - Volume 2*, 27–30.

Duel, T., & Lévy, P. (2015). The Chatter Door, designing for in-between spaces. *6th International Congress of International Association of Societies of Design Research, IASDR 2015*.

Findeli, A., Brouillet, D., Martin, S., Moineau, C., & Tarrago, R. (2008). *Research Through Design and Transdisciplinarity: A Tentative Contribution to the Methodology of Design Research*. 67–91.

KEER2020, TOKYO, JAPAN | SEPTEMBER 7-9 2020
8TH INTERNATIONAL CONFERENCE ON KANSEI ENGINEERING AND EMOTION RESEARCH 2020

KEER2O2O

Hara, K. (2015). *Visualize the philosophy of MUJI*. MUJI 無印良品: 無印良品とクリエイター. http://www.muji.com/uk/flagship/huaihai755/archive/hara.html

Harada, A. (1998). On the definition of Kansei. In *Modeling the Evaluation Structure of Kansei* (Vol. 2). University of Tsukuba.

Kusunoki, K., & Seo, J. (2017). Opinion. In T. Choi, J. Seo, & Y. A. Kim (Eds.), *B - Muji* (Vol. 53, pp. 23–25). Joh & Company.

Lee, S., Yamanaka, T., Lévy, P., Lee, S., & Yamanaka, T. (2007). ON KANSEI AND KANSEI DESIGN A DESCRIPTION OF JAPANESE DESIGN APPROACH. *Engineering*, 1–18.

Lévy, P. (2014). Impact of Perception Theories on Kansei Design. *Japan Society of Kansei Engineering*, *13*(1), 21–26.

Lévy, P. (2018). *Le temps de l'expérience, enchanter le quotidien par le design* [Habilitation à diriger des recherches]. Université de Technologie de Compiègne, France.

Lévy, P. (2019). Designing for the everyday through thusness and irregularity. *Proceedings of the International Association of Societies of Design Research Conference 2019, IASDR19*. International Association of Societies of Design Research Conference 2019, Manchester, UK.

Lévy, P., & Yamada, S. (2017). 3D-modeling and 3D-printing Explorations on Japanese Tea Ceremony Utensils. *Proceedings of the Eleventh International Conference on Tangible, Embedded, and Embodied Interaction - TEI'17*, 283–288. https://doi.org/10.1145/3024969.3024990

Lévy, P., & Yamanaka, T. (2006). Towards a definition of Kansei. *Proceedings of the 2006 Design Research Society International Conference, Wonderground 2006*.

Lokman, A. M. (2010). Design & Emotion: The Kansei Engineering Methodology. *Design & Emotion: The Kansei Engineering Methodology*, *1*(1), 1–11.

Minä Perhonen. (2005). *Minä perhonen 2 embroidery*. Bunka Publishing Bureau.

Nagamachi, M. (2006). Kansei Engineering and Kansei Evaluation. In W. Karwowski (Ed.), *International Encyclopedia of Ergonomics and Human Factors, Second Edition—3 Volume Set* (p. 1254). CRC Press. https://doi.org/10.1201/9780849375477.ch427

Nishida, K. (1987). *Nishida Kitarō Zenshū*. Iwanami Shoten.

Schütte, S. (2005). *Engineering Emotional Values in Product Design—Kansei Engineering in Development* [Doctoral Thesis]. Linköpings University.

United Nations. (2015, November 19). *Global Issues Overview*. Global Issues Overview. https://www.un.org/en/sections/issues-depth/global-issues-overview/

Wilkinson, R. (2009). *Nishida and Western philosophy*. Ashgate Publishing.

Yanagi, S. (1989). *The Unknown Craftsman: A Japanese Insight into Beauty*. Kodansha International.