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Benefit of Inconvenience: Revising Human Ability for the Design of Kansei Design

Yuuki Shigemoto

Independent Researcher

ABSTRACT

In response to Norman's argument that human-centred design can be harmful, this paper introduces the concept of *Benefit of Inconvenience*, and explores the potential of *Kansei Design*. Benefit of inconvenience is the enhanced user value that is brought about by adding extra effort (and time) to daily activities that aim to achieve certain objectives. The concept identifies its notability in design research and practice due to its perspective that places a user as a constituent factor of a holistic design system for solving a problem rather than regarding the user merely as a recipient of the solution. Subsequently, a possible integration of the benefit of inconvenience, KJ Method and Kansei Engineering (the methodologies that leverage kansei and intellect for structuring meanings of the world and translating the structured meanings into physical specification) that together forms Kansei Design (one of the possible accomplishment forms of design management) is illustrated.

Keywords: Benefit of inconvenience, Human-centred design, KJ Method, Kansei engineering, Design management

INTRODUCTION

The Psychology of Everyday Things (POET) (Norman, 1988) dramatically increased awareness of 'human-centred design (HCD)' the rise of which in the past few decades has made us strive for increasingly more convenient products and services that are believed to improve the quality of our lives. It has therefore been premised that the more convenient a product is, the higher its value. Seventeen years after the POET, Norman also wrote a paper titled 'Human-centered design considered harmful', in which he claims that a convenient social system can be regarded as harmful to human beings (Norman, 2005). Norman might look to have backtracked from his original viewpoint. However, he does not in fact deny the basic concept of the HCD.

The perspective that sees HCD as harmful may be understood as Norman's warning against the superficial understanding of HCD and the trend that seeks adaptive or adaptable devices (systems) for human beings. What he was truly seeking was design that leveraged the human ability to adapt. In other words, our ability to change in response to our surrounding environment. For instance, a system where a user does nothing whilst the surrounding

objects do everything for the user is regarded as human-centred. But Norman regards such design as nonsense. The pitfalls of the 'convenient' HCD may provide a space for considering a new direction for design research and practice. By contrast, the system that is designed for inspiring and being inspired by human activities (i.e. users make an effort) surrounding products is what is needed for the next step in design research and practice.

Consequently, this paper is motivated to introduce the concept of *Benefit of Inconvenience*, and explore the potential of Kansei Design (see Shigemoto, 2020) that is crystalised by benefit of inconvenience, KJ Method (Kawakita, 1967) and Kansei Engineering (Nagamachi, 1995) that all leverage innate ability of human being.

BENEFIT OF INCONVENIENCE

Benefit of inconvenience (BoI, hereafter), first introduced to (Japanese) academia by Hiroshi Kawakami in 2009 (Kawakami, 2009), refers to the advanced user value that can only be realised with the increased human engagement of the user. It is therefore investigated and cultivated by revising the purpose of products and services that involve more human effort and/or time to achieve certain objectives. Subsequently, it is attempted to revise the value of products by reversing their inconvenience into a source of human value.

In general, when the human-centred design (HCD) seeks 'automation', human activities should be minimised. For objects and systems, being more convenient means being able to achieve the same functional goals with less human effort and/or in less time. By contrast, we can view more effortful/time-consuming user activities as something that may be leveraged as a source of producing beneficial outcome for the users.

BoI is therefore not the state of 'being inconvenient, *but* beneficial'. Rather it is more a matter of 'being inconvenient, *and therefore* beneficial'. Consequently, the concept is meant to propose a new dimension of meaning within the already existing design principles that may be limited to just seeking more convenient products and services. Inconvenience does not equate discomfort, instead benefit-of-inconvenience design seeks to achieve *comfortable uncomfortableness*.

Convenience and Benefit are Separate Matters

Being (in)convenient is a relative state that can only be evaluated in comparison to other objects – there are no objects that can independently be convenient or inconvenient. Judgement regarding (in)convenience is based on the amount of labour, which consists of 'effort' and 'time' needed to be spent to achieve a particular objective (Jiang, Yang and Jun, 2013; Reimers, 2014; Warde, 1999). Furthermore, the effort is regarded as being categorised into two types; 'physical' effort and 'intellectual' effort that require kinetic energy (i.e. moving the human body) and cognitive energy (e.g. concentration, memorisation, conception, and so forth), respectively (Kawakami, 2013). Consequently, human performance is a result of physical or intellectual effort,

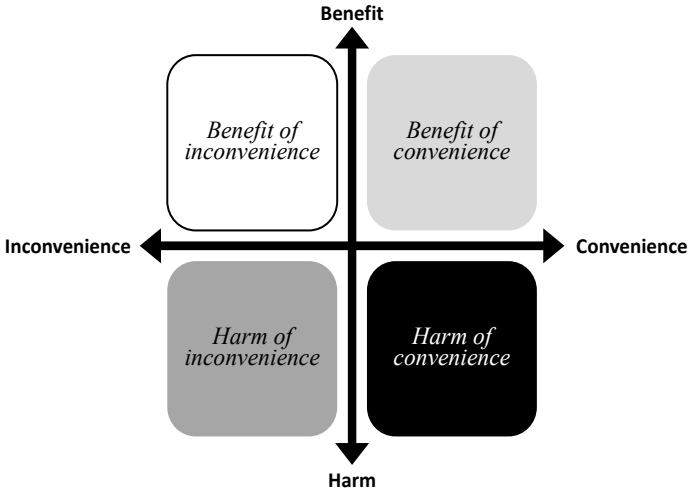

Figure 1: Evaluative matrix for a benefit-of-inconvenience design.

or both. Overall, 'inconvenience' means requiring more labour (=physical and/or intellectual effort and time) to achieve an objective.

In general, although 'inconvenience' and 'benefit' may be recognised as contradictory terms, these two notions should actually be considered compatible (Kawakami, 2019). Evaluation of products and services, as well as design decisions, should be made within a framework that has two sets of orthogonal bipolar axes that consist of 1) convenience and inconvenience, and 2) benefit and harm. A combination of the axes generates four evaluative quadrants for the sense of design that integrates the benefit-of-inconvenience design (see Figure 1 (Shigemoto and Kawakami, 2019)). Every product is normally perceived through the lens of the benefit of convenience and the harm of inconvenience. But let us remember that the axes of convenience and inconvenience and benefit and harm are continuous bipolar concepts on the same dimensions, and thus the judgement depends on comparison of possible means to attain an objective. This framework nonetheless highlights another direction of HCD.

Objective and Subjective Recognitions of Effort and Benefit

The previous section explained the new way of looking at an interaction between a user and a thing. We now must consider that people sometimes do not find it inconvenient to spend immense effort on activities that they are passionate about. Therefore, it is necessary here to bring in another set of lenses when assessing BoI; *objectivity* and *subjectivity*. These criteria are applied to the assessment of effort and benefit. Table 1 (Shigemoto and Kawakami, 2019) shows the descriptions of objective and subjective effort/benefit.

This idea is developed based on Shigemoto's conceptual framework regarding how people may perceive their user experience with a product (Shigemoto, 2017). The objectively measurable value and the subjectively perceived value are described as 'utilitarian' and 'hedonic' value, respectively. Based

Table 1. Description of objective and subjective recognitions of effort and benefit.

	Objective	Subjective
Effort	Amount of effort that can be universally measured by anyone.	The perception of the effort spent as experienced by the individual.
Benefit	Amount of tangible positive changes in the real world that can be universally measured by anyone.	The intangible positive changes within one's mind that are experienced personally by an individual.

upon the review of empirical papers that have previously examined the utilitarian and the hedonic influence on consumer value, the utilitarian value is defined as the tangible changes in the real world that are achieved by the physical function of a product, whereas the hedonic value is defined as the intangible changes within one's mind that are achieved through the emotional satisfaction of a consumer who uses or owns the item. These changes can thus be measured and evaluated through a set of objective criteria as well as the subjective experiences of the consumer. Utilitarian and hedonic evaluations can be positive and negative, and the degree of change indicates whether it is more beneficial (or more harmful). The combined positives and negatives determine whether they are beneficial or harmful; the more positive the value is, the more beneficial an object is.

There are also two other conditions for approving BoI: i) effort and benefit(s) must be attributed to the same person; ii) there is an exception in the subjective recognition of indirect benefits; BoI does not take into account users' affective responses, which come from nostalgic feelings that arise from using old-fashioned items. Such experiences are only regarded as inconvenient when compared to those involving updated models. In short, the feelings of symbolic value held towards inconvenient items is not regarded as BoI. Old-fashioned items must be assessed for their functionality rather than their symbolic value associated with a consumer's past.

DESIGNOLOGICAL SIGNIFICANCE OF BENEFIT OF INCONVENIENCE

Users are Creators of Design as Well as Being the Recipients

The concept of benefit of inconvenience (BoI) identifies its notability in design research and practice due to its perspective that places a user as a constituent factor of a holistic design system for solving a problem rather than regarding the user merely as a recipient of the solution. Thus, in contrast to the current human-centred design where a user is treated as a customer who is offered an outcome of design (a solution to a problem), users in the BoI design system are co-creators of a problem-solving process by which a more creative design outcome is expected. The experience of the creative process may also enhance the user's physical, intellectual and kansei abilities. In other words, the quintessence of BoI design is the continuous process of creation and consumption that fosters human ability of users towards more creative co-designing. Furthermore, the seemingly irrational perspective of BoI may not be strongly

observed in the global knowledge regarding design that has developed based on Western science, which is founded upon rationality.

A Designer is the Balancer of Holisticness

The 'whole as an assembly of factors' and the 'holisticness' are never the same. The sense of the holistically designed can only convince human beings. The feeling of convinced is yielded only when logical explanation is accompanied by kansei expression (which may be best described as 'intuitive expression' in English) (Kawakita, 1985). The absence of this perspective stagnates the industrial practice that has been pursuing efficiency by division of labour. Such an industrial system and organisational structures best support mass-production of standardised products. But they do not suit the design-driven (meaning-driven) manufacturing (see Norman and Verganti, 2014). Therefore, the bird's-eye view on the holistic design system with a BoI perspective transfigures the value of design outcome that is offered to users in return for their labour. Consequently, the extra effort of a user involves the potential to lead the whole design system towards bringing about innovation.

KANSEI DESIGN – KJ METHOD, KANSEI ENGINEERING AND BENEFIT OF INCONVENIENCE

Phenomena must be experienced and captured by the kansei of a man, and subsequently, they should be given description by the logic of science during communication with others. This practice explores a new orientation of human-centred design as human activity. This assertion is made based on the revival of the innate ability of mankind. The civilization that has sought to enrich our lives has also functioned to shrink our capability as a creature. It is important to appreciate the advanced (convenient) aspect of artifacts, but we should also be aware of the fact that there are tasks that can only make their sense when done by human beings ourselves.

Such practice has been done by Jiro Kawakita and Mitsuo Nagamachi, who are the inventor and the founder of KJ Method and Kansei Engineering in the 1960s and 1970s, respectively. KJ Method is by nature a practice for human development whilst Kansei Engineering seeks for delights for people both in production and consumption. Their works are already well known in the fields of ethno-geography and ergonomics, but they can now be provided a further new value in a designological perspective by benefit of inconvenience (BoI), which labels the two design thinkers' practices. The natures and significances of the KJ Method and Kansei Engineering are well discussed in these papers (see Shigemoto, 2020; 2021).

Thus, combining the KJ Method and Kansei Engineering (the methodologies that leverage kansei and intellect for structuring meanings of the world and translating the structured meanings into physical specification) with benefit of inconvenience (the perspective that places a man as a creator as well as a recipient of design), we can achieve the design that manages intuition and logic to attain physical embodiment of conceptual solutions to the structured meanings of social problems. This design practice brings products and

service that seduce people, and this is what the author calls 'Kansei Design'; one of the possible accomplishment forms of design management.

CONCLUSION

In line with Norman's argument that human-centred design (HCD) can be harmful, this paper responded by introducing the benefit of inconvenience (BoI), one of the possible new perspectives on HCD research. It is the enhanced user value that is brought about by adding extra effort (and time) to daily activities that aim to achieve certain objectives. Furthermore, a possible suggestion for the integration of the benefit of inconvenience, the KJ Method and Kansei Engineering has been illustrated. This is yet an idea, but empirical studies regarding benefit of inconvenience, the KJ Method and Kansei Engineering are currently ongoing.

In light of the recent global situation where everyone has been challenged to deal with COVID-19, there is an increased impetus for revising not only the way we conduct our lives but also what we consider to be valuable.

Today we live in a world of objects designed for rapid consumption, objects requiring a minimum of effort and attention to use them, but also objects that leave no lasting impression on our memories – a throw-away that requires no effort but, at the same time, produces no real quality. (Manzini and Cullars, 1992) We should now step back and look at the holistic socio-cultural and chronological environment where the users are structured. This paper hopes and expects to provide a new insight that improves the global knowledge and practice regarding HCD.

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REFERENCES

Jiang, Ling (Alice), Yang, Zhilin, and Jun, Minjoon. (2013). Measuring consumer perceptions of online shopping convenience. *Journal of Service Management*, 24(2), 191–214.

Kawakami, Hiroshi. (2009). Fuben no koyo ni chakumoku shita shisutemu dezain ni mukete [Toward System Design based on Benefit of Inconvenience] (in Japanese). Human Interface Society, 11(1), 125–134.

Kawakami, Hiroshi. (2013). Further benefit of a kind of inconvenience for social information systems. In: Kurosu, M. (eds) *Human–Computer Interaction. Users and Contexts of Use* (HCI 2013. Lecture Notes in Computer Science, vol. 8006). Berlin, Heidelberg: Springer.

Kawakami, Hiroshi. (2019). Designing human–machine systems focusing on benefits of inconvenience. In: Sato, A. (eds) *Applications of Data-Centric Science to Social Design*. Singapore: Springer.

Kawakita, Jiro (1967). Hasso ho [Methodology for Ideation] (in Japanese). Chuko shinsho.

Kawakita, Jiro (1985). Hasso ho (KJ ho) to dezain (KJ Method and Design) (in Japanese). Dezain gaku kenkyu (Bulletin of JSSD), 2–8.

Manzini, Ezio and Cullars, John. (1992). Prometheus of the everyday: The ecology of the artificial and the designer's responsibility. *Design Issues*, 9(1), 5–20.

Nagamachi, Mitsuo. (1995). Kansei Engineering: A new ergonomic consumer-oriented technology for product development. *International Journal of Industrial Ergonomics*, 15, 3–11.

Norman, Donald A. (1988). *The Psychology of Everyday Things*. Basic Books.

Norman, Donald A. (2005). Human-centered design considered harmful. *Interactions*, 12(4), 14–19.

Norman, Donald A. and Verganti, Roberto. (2014). Incremental and radical innovation: Design research vs. technology and meaning change. Design Issues, 30(1), 78–96.

Reimers, Vaughan. (2014). A consumer definition of store convenience (finally). *International Journal of Retail & Distribution Management*, 42(4), 315–333.

Shigemoto, Yuuki. (2017). Managing emotion for a sustainable future. In: Bohemia, E., Bont, C.D., Holm, L. S. (eds) *Design Management Academy Conference* 2017(3), 733–752. Design Management Academy: Hong Kong.

Shigemoto, Yuuki. (2020). Meaning and approach of new product designing through Kansei Engineering. In: Di Bucchianico G., Shin C., Shim S., Fukuda S., Montagna G., Carvalho C. (eds) Advances in Industrial Design. AHFE 2020. Advances in Intelligent Systems and Computing, 1202, 621–626: Springer.

Shigemoto, Yuuki. (2021). Beyond IDEO's design thinking: Combining KJ method and Kansei Engineering for the creation of creativity. In International Conference on Applied Human Factors and Ergonomics (pp. 16–23): Springer, Cham.

Shigemoto, Yuuki and Kawakami, Hiroshi. (2019). Rethinking the 'innovation of meaning' from a 'benefit of inconvenience' perspective. In the Conference Proceedings of the 4D Conference 2019 Osaka, 117–126.

Warde, Alan. (1999). Convenience food: Space and timing. *British Food Journal,* 101(7), 518–527.