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Innovation of meaning: design-driven study based on the interpretive theory of new meaning

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Abstract

This study conducts design-driven meaning innovation research based on an interpretation of new meaning through qualitative and quantitative research rooted in design practice and builds design-driven theories, methodology, and highly replicable methods. It presents a new design approach to design thinking called 'design methodology and method of meaningful products'. The design process and framework integrate words, visuals, and functions to interpret and create new meanings. It highlights the importance of design semiotics in overcoming the limitations of traditional approaches.

Keywords: design thinking, design analysis, innovation of meaning, design-driven innovation, method of meaning products

1. Introduction

Design thinking (Brown, 2008) is a human-centred approach to strategically creating new value that uses designers' sensibilities and methods to generate ideas that better satisfy consumer needs and desires. Design thinking, which has developed in multiple forms around the world as an essential methodology for innovation, is classified into four categories (Dell'Era et al., 2020): 'creative problem solving', 'design sprints', 'creative confidence', and 'innovation of meaning'. It is recommended to use each of them according to their objectives and country characteristics. However, designers' creative practices must be adequately theorised in the design thinking literature (Rylander Eklund et al., 2022). Although the conceptualisation of design thinking originates from design practice, the link between researchers and design practice needs to be stronger.

Design thinking has attracted considerable attention since the beginning of the 21st century. Moreover, there is criticism from a design practice perspective that its definition and methods are vague and have fallen into commercialism and innovation theatre (Ackermann, 2023). Innovation theatre is the superficial practice of design-thinking processes and the pretence of innovation. This causes the social mission and ethics of design thinking to be lost and encourages disregard for designers' 'creative practices'.

Design thinking now faces challenges in research and practice and needs improvement and redefinition. Therefore, the importance of design-thinking research rooted in design practice and focusing on creative practices is increasing. For example, Norman (2013), an advocate of Human Centered Design, and Verganti (2009), an advocate of design-driven innovation, argue that the innovation of meaning, one of design thinking, can be recognised and replicated through design research (Norman and Verganti, 2014). Traditional design-thinking processes and other creative methods do not emphasise the importance of interpreting new meanings. Therefore, design-driven meaning research based on the interpretation of new meanings can lead to radical innovations that are recognisable and reproducible.

However, consumer demand is becoming more diverse, and not only technological superiority but also the sensory quality of products is becoming more critical ([Yanagisawa, 2011](#)). For example, consumers do not simply consume goods and experiences but also call their favourite idols and characters 'supporting my fave' and support them in various ways. They also enjoy contributing to society through sustainable products, called 'meaning-consumption' in Japan. This study focuses on issues related to design-thinking research, practices, and changes in consumer behaviour.

2. Study objectives

This study aims to conduct design-driven meaning innovation research based on new meaning interpretations through qualitative and quantitative research rooted in design practice and build design-driven theories, methodologies, and methods with high reproducibility. In this study, we first focus on qualitative research. Our qualitative findings will form the basis for future quantitative research emphasising reproducibility.

In this study, 1) we prepared proposals rooted in design practice and 2) conducted experiments through design practice. 1: Proposals rooted in design practice lead to 1-1: a new theory of meaning interpretation, establish 1-2: the design process as a design methodology, and put forth 1-3: the design framework as a design method. Experiments through design practice aim to 2-1: improve the design process and framework and 2-2: create multiple successful case studies.

3. Research methodology

First, we investigated previous research and analysed the issues and backgrounds. Next, we constructed a hypothesis for a new meaning interpretation theory and devised a design process and framework. Finally, we experimented with methodology through the design practice of the NEW STANDARD Corporation, which supports brand development and CX development for Millennials and Generation Z.

3.1. Challenges for design thinking research

Generally, design thinking is defined in five steps: empathy, definition, conception, prototyping, and evaluation; however, clear and agreed-upon definitions and explanations of design thinking are insufficient ([Kimbell, 2011](#)). For example, the tools and techniques recommended in design practice are diverse, and no fixed standards exist for their selection and use. Design thinking has been applied in diverse fields and domains; however, it is difficult to measure its outcomes and effects using specific criteria.

Innovation of meaning ([Verganti, 2008](#)), defined as a design-thinking approach, faces similar challenges. Innovation of meaning is a core part of design-driven innovation proposed by Verganti. It refers to building new consumer relationships by providing the functional value of products and services and meaning value. Meaning value is the fulfilment of a user's sensibilities, values, and identities. Verganti proposed the concept of design discourse to realise the innovation of meaning. Design Discourse is the opposite of general design thinking; it adopts an inside-out approach and proposes one's needs and requirements without following the market or customers. Design Discourse is a dynamic network of relationships in which various actors, such as designers, companies, schools, artists, and the media, influence each other by proposing new meanings and languages. By participating in the design discourse, companies are expected to become more sensitive to social and cultural changes and be able to express their visions and values. As design discourse is an informal, unstructured, and nonlinear process, it is difficult to manage and control it; the same applies to measuring its effectiveness and outcomes. Furthermore, [Norman and Verganti (2014)](#) argued in figure 1 that HCD-driven incremental innovations (point A to point B and point C to point D) and radical innovations that change technology or meaning (point B to point C) arise from different processes. The difference and relationship between the two types of innovation were explained using the mountain climbing paradigm.

Radical innovations arise from changes in technology or meaning, and technology-driven radical innovations often come from inventors and others. However, they argued that meaning-driven radical

innovation (point B to point C) can come from design research and that traditional processes and other creative methods do not emphasise the importance of the process of interpreting new meanings.
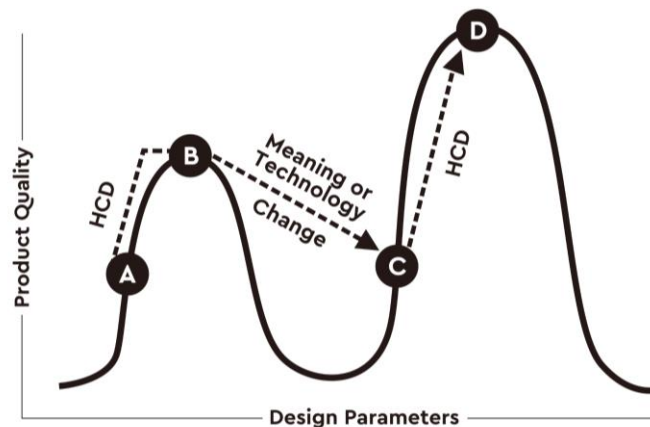

Figure 1. Incremental and radical innovation: Design research vs. technology and meaning change (Norman and Verganti, 2014); Retrieved from https://doi.org/10.1162/DESI_a_00250

The implicit cognitivist tendency in design-thinking research fails to account for designers' creative practices, cultural aspects, and sensitivities. Implicit cognitivism is the tendency to adopt cognition-oriented perspectives and assumptions without explicitly recognising or acknowledging them. This suggests that cognitive ideas and principles are often unconsciously integrated into theory, practice, culture, and management (Rylander Eklund et al., 2022). Therefore, design thinking in design thinking research is introduced only as a cognitive problem-solving activity, whereas design thinking in design practice is criticised for its vague processes and procedures. In other words, it can be said that an alternative theoretical perspective based on an understanding of creativity is required for future design thinking research.

3.2. New meaning interpretation hypothesis

To propose an alternative theoretical perspective based on an understanding of creativity, this study used the framework of design science (Japan Institute of Design, 2019; Figure 2) to investigate a new theory of meaning interpretation. This study focuses on design semiotics as design theory.
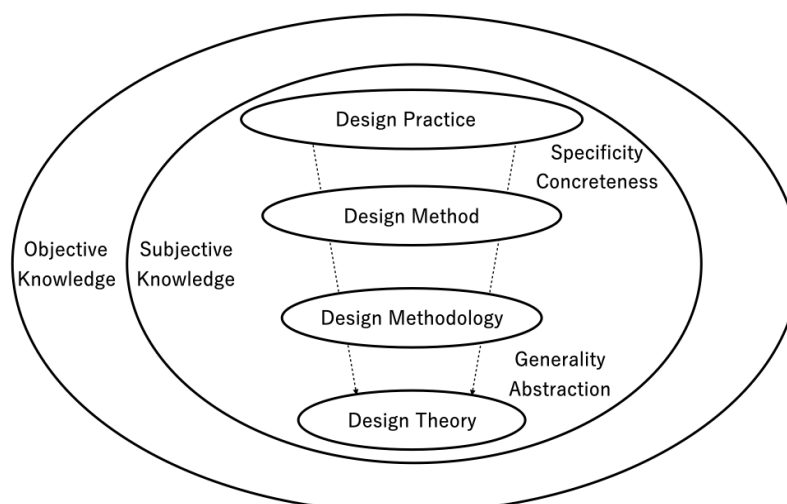

Figure 2. Framework of design science from Design Science Encyclopaedia

Contextual design (Beyer and Holtzblatt, 1999) positions context as a framework for a comprehensive view of users' activities, environments, behaviours, challenges and needs. They emphasise the

importance of a deep understanding of the user's actual living and working environment when designing products and services and basing the design on this understanding. Perth and Saussure's semiotics, communication design research and Krippendorff's (2005) semantic turn also explicitly state that people's interpretation of signs and artefacts is context-dependent. For example, the meaning interpretation of the object beer differs in the context of a holiday and a sports match, as shown in (Figure 3).
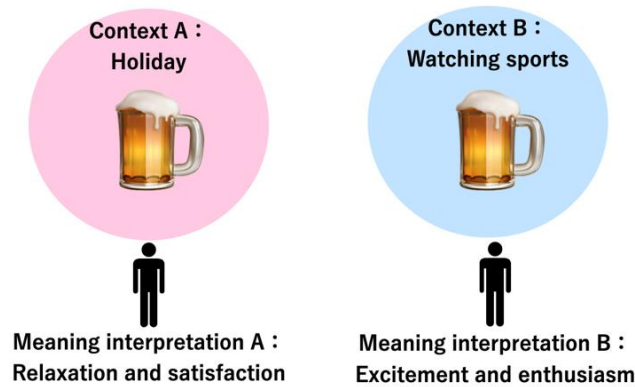
Figure 3. Different meanings arising in different contexts

However, this theory of contextual meaning interpretation has not been considered in research on the innovation of meaning as a replicable and recognisable method of meaning interpretation, even by Norman and Verganti (2014). It has also not been used in previous research as a methodology for design-driven meaning innovation based on new meaning interpretation. First, we interpreted Schumpeter's (1934) statement that innovation is a broader new combination. Furthermore, we explored how the active combination of new contexts about an object can lead to recognisable and replicable theory, methodology and method. In other words, we hypothesised that new meaning values could be created by analysing the existing contexts associated with the objects for the customer groups, analysing and identifying new contexts that the customer groups focus on, combining the new contexts with the objects and devising a design process to interpret their meaning. This study proposes a recognisable, reproducible and replicable theory, methodology and method for actively designing new interpretations of meaning based on design semiotics. In this study, the theory of new meaning interpretation is 'object × context = meaning' (Figure 4).
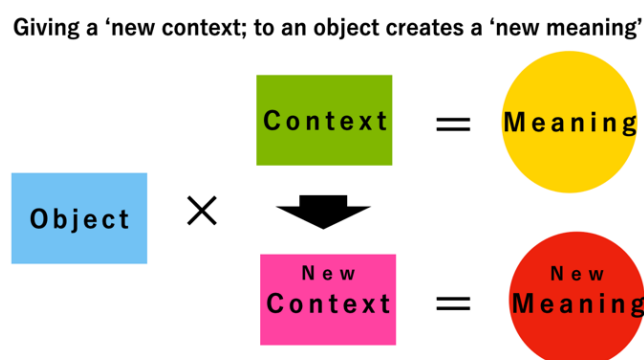

Figure 4. Giving a 'new context to an object creates a 'new meaning'

To test the hypothesis, the 'object x context = meaning' framework was used to examine cases considered to be innovations in meaning. Of course, no single context pattern or meaning is associated with an object, but we took several easily understandable cases and extracted those shown in Figure 5. It was also confirmed that contextual keywords, such as those shown in Figure 6, as new standards and values of the new age, are associated with innovation cases of meanings.
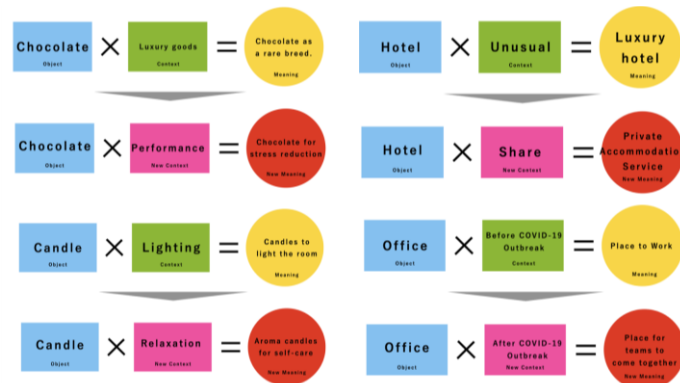
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Figure 5. Giving a 'new context to an object creates a 'new meaning'; A case study

Figure 6. New standards and new values of the new age

3.3. Design-driven methodology and methods based on new interpretations of meaning

Next, the hierarchy of design methodology was divided into three levels (Figure 7): one (words), two (visual) and three (technical/functional). We then developed a design process based on new interpretations of meaning based on the divergence-convergence model (Banathy, 2013) and the British Design Council's double diamond.
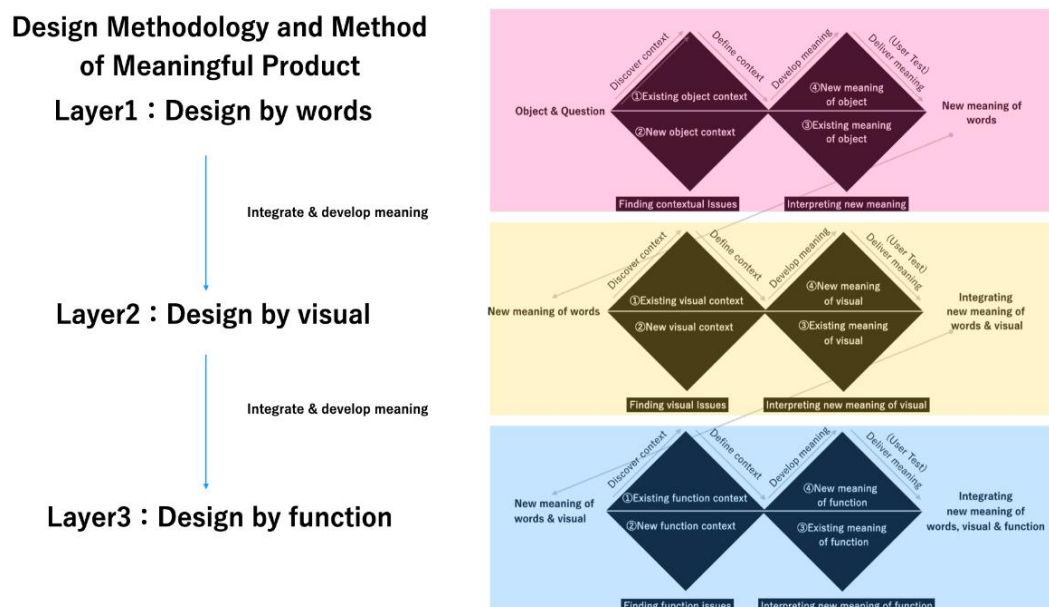

Figure 7. Design methodology and method of meaningful products. Interpret and create meaning by integrating words, visuals, and functions

We also developed three practical design frameworks to support designers' creativity, refined through design practice. A set of methodologies was then compiled and named 'Design methodology and method of meaningful products'. The 'Design methodology and method of meaningful products' took an approach that was the exact opposite of standard manufacturing practices. In other words, it is a design-led methodology based on a new interpretation of meaning, where necessary functions are designed from a meaning perspective rather than a technical perspective.

In this study, we have focused on a detailed description of the process of one level of the design methodology hierarchy (language) and a design framework for three practical new interpretations of meaning that support designers' creativity.

Discovering existing context: exploring the existing context associated with an object through desktop research and user interviews. Discover new context: Find contextual keywords based on new standards and values of the time, contextual keywords of popular products in other fields, etc., through desktop research, user interviews, and ideation. Building your own contextual keyword database is recommended.

Define the existing context: List the context associated with the object in Framework 1. Discover new context: From the context keywords found, identify new contexts not yet associated with the object and list them in Framework 1 (Figure 8).

Develop existing meaning: The contexts associated with the object and listed in Frame 1 are interpreted into meaning. Develop new meaning: Interpret and verbalise the meaning of the new contexts not associated with the object listed in Framework 1.

Provide existing meaning: To narrow the search, the user is given a comparison test between 'object × existing context = existing meaning' and 'object × new context = new meaning'. Provide new meaning: Based on the user test, deepen the context analysis using Framework 2 (Figure 9), clarify the superiority of the new context and new meaning, and refine the new meaning. Create framework 3 (Figure 10) based on the new meaning.
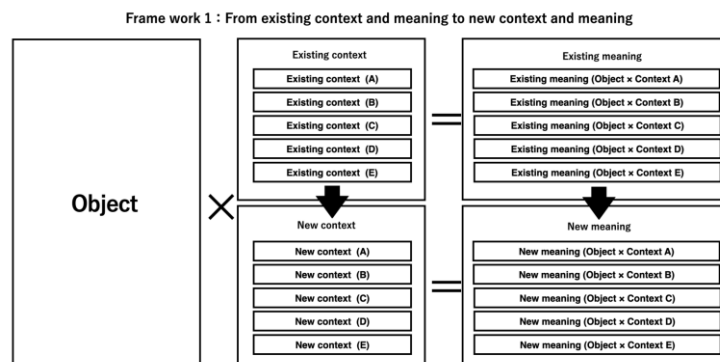

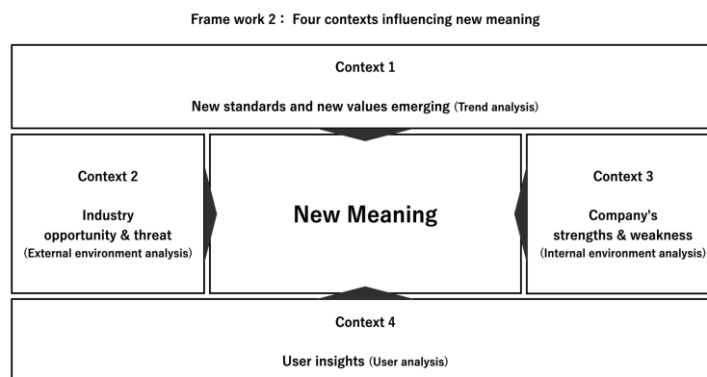**Figure 8. From existing context and meaning to new context and meaning**

Figure 9. From existing context and meaning to new context and meaning

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Figure 10. Brand identity with new meaning

3.4. Experimentation with methodology and method through design practice

Together with the design team of the NEW STANDARD Corporation, which supports the development of new brands and products, mainly consumer goods, the design process and framework were experimented with and improved through ten new product brand development tasks. The study was conducted from September 2020 to August 2023. In addition, the following three points were considered when conducting the project considering the establishment of a cooperation system within the client company and the differences in culture between companies (Figure 11).

1. Team building was based on the concept of a team rather than contract work between different organisations and the policy of small and fast failure.
2. The members of the client company were always selected from several related departments.
3. When advertising agencies participated, the producer from the advertising agency played a coordinating role.

Figure 11. Basic project team organisation

4. Research results

4.1. New theories of new meaning interpretation

Thus, a new meaning interpretation theory was established. By utilising the new meaning interpretation theory, object × context = meaning, and by changing the existing context into a new context, new meaning can be created.

In the NEW STANDARD Corporation, the introduction of design discourse, a methodology of meaning interpretation, and meaning value creation proposed by Vergant failed because of its ambiguity. In this study, the introduction of the design discourse was abandoned because of its high degree of difficulty. A new theory of meaning interpretation was developed through trial and error in design practice. The design process and framework would not have been devised without the new meaning interpretation theory. Under the new meaning interpretation theory, the first design layer succeeded in eight out of ten projects during the experimental period. In other words, this study succeeded in interpreting the meanings of 'object x context' and creating meaning values using them. However, without a standard new meaning interpretation theory based on design meaning, meaning interpretation is extremely difficult due to the abstraction level.

4.2. Suggestions and improvements to the design processes and frameworks

This study succeeded in concretising the ambiguous design thinking process as a methodology for design-driven meaning innovation based on a new meaning interpretation. This is because this study devised a design process and framework based on a new theory of meaning interpretation that went back and forth between design thinking and design thinking research. During the experimental period, the sensitivity and creativity of the designers in charge of design practice were utilised, and detailed improvements were made to the design process and framework, which continued to be utilised in design practice.

4.3. Generating multiple success stories

The results of the design practice were summarised using the design hierarchy, and the course of the project was classified as in progress, successful, failed, or terminated (Table 1).

Table 1. Project progress for a total of ten projects (as of Aug 2023)

Total of ten projects in progress (as of August 2023)	Number of ongoing project	Number of successful projects	Number of failures projects
Development/manufacturing/sales		4	
3rd layer design: Interpret & create meaning by integrating words, visual, and function	2	4	
2nd layer design: Interpret & create meaning by integrating words and visual	1	6	1
1st layer design: interpret & create meaning with words	2	8	

4.4. Representative success story 'Asahi White Beer'

ASAHI WHITE BEER (Figure 12) was launched in May 2022. As a beer with an unprecedented new value–a new meaning (Figure 13)–it has succeeded in attracting younger consumers and opening up a new market.
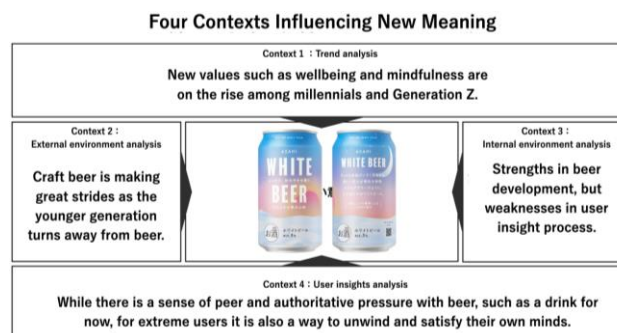

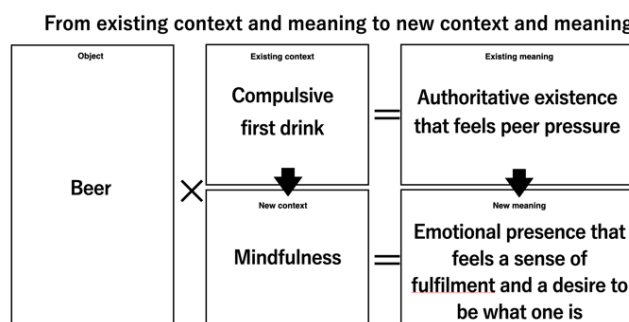**Figure 12. Asahi White Beer; Four contexts influencing new meaning**

Figure 13. From existing context and meaning to new context and meaning

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5. Discussion

This study has partially successfully concretised the abstract and ambiguous processes of traditional design thinking. The new theory of meaning interpretation, 'object x context = meaning', increases the understanding and involvement of the project members in the design process and framework. Starting with the design of a language that everyone could understand, the project members' level of understanding and involvement increased. In addition, the design process for each design hierarchy - linguistic, visual and functional - succeeded in deepening the interpretation of meaning step-by-step, leading to consistent value creation. Therefore, the project was not seen as an innovation theatre where the design-thinking process is practised superficially. The tendency to neglect designers' creativity has been a problem in conventional design-thinking research. However, the design process and framework improved through design practice act as a guide to creativity.

Moreover, it is an easy process for non-designers to participate in because words are driven by meaning. A process that facilitates designers' creativity because the purpose of creativity is meaning. Consequently, designers and project members can discuss ideas and concepts more thoroughly. Clarifies the purpose of function development and streamlines the process, as the function is designed from a meaning value point of view. However, one case of failure resulted from the client's lack of understanding of the design process and framework. This project was terminated due to a lack of alignment between the meaning-centred development process and the client's function-driven development policy. This meant that the development culture and processes could not be aligned.

The study also had several limitations. The development target was limited to consumer products, and the target consumers were limited to Millennials and Generation Z. Reproducibility with a broader development target was not confirmed. Detailed methods for the visual and functional design process were also not included in the framework. There is also no mention of digging deeper for optimal solutions from the members of each project and specific team-building methods. The same applies to the creative practice of designers, with no mention of detailed ideation methods and reasoning for meaning interpretation as designers relate new contexts to objects. Similarly, the detailed methods designers use to conduct user interviews have not been clarified. In other words, the implicit cognitivist tendencies in design thinking research remain in this study, and designers' creative practices, cultural aspects and sensitivities are not fully considered. The spillover effects on people and society after the discovery of meaning are beyond the scope of this study and are a topic for future research. Only when it reaches many people can it be considered an innovation. In future design thinking research, it will be necessary to elucidate designers' sensitivity and creative reality. Therefore, to achieve this, in addition to continuing qualitative research based on design practice, it will be essential to develop quantitative research to analyse context and meaning, create meaning, evaluate meaning, and respective design methods. Kansei evaluation systems (Yanagisawa, 2016) and Kansei design (Yanagisawa et al., 2011), which Kansei engineering has been studying for many years, have high potential for application in quantitative research to clarify the sensitivity and creative reality of designers and should continue to be considered for the development of research.

6. Conclusion

This study aimed to conduct design-led meaning innovation research based on a new meaning interpretation through qualitative and quantitative research rooted in design practice to build a design-led theory, methodology, and methods with high reproducibility.

This study achieved a new design-driven interpretation of meaning by analysing the contexts associated with objects and combining new contexts for objects. In the narrow scope of consumer goods development, repeated design practice has enabled us to improve the design process and framework and increase its accuracy; this study has succeeded to a certain extent in building a theoretical foundation through qualitative research. However, it is difficult to determine whether practical design methods and the essence of sensibility have been explored in depth. Design-practice-led qualitative research has many limitations, such as the length of the design practice period and confidentiality. To establish practical and reproducible methodologies and methods in the future, in addition to designing practical qualitative research, it is essential to establish quantitative research methods using Kansei engineering and Kansei

design and research methods that cover the three areas of design practice, qualitative research, and quantitative research.

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