Design DNA: At the Reflective Aspects in the Level of Design

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ABSTRACT

Design DNA derives from the idea of DNA concept, commonly known as the chromosome and genetic formation that make most of the organism and, it has its identical profile and criteria. In Design DNA, it contains the attributes that can be referred to the design levels, which contains the visceral, behavioral and reflective. Hence, each level has its details where makes criteria for the desired design are completed. Moreover, these three levels are segregated with discrete aspects of making design. Continuously, each in-level design is expressed in the recognition perspective, and here, the visceral, behavioral, and reflective parts of design DNA are set to be simplified in terminology. Moreover, certain levels like visceral and behavioral aspect formulation for design DNA have been discussed, but no discussion was made in the reflective level. This study focuses on one perspective of the reflective level part and the suggested formulation in purpose for the complete design DNA.

Keywords: *Design DNA, Levels of Design, Reflective level*

INTRODUCTION

DNA can be referred to any organism or life with a particular aspect to have recognizable appearances, performances, and reactions. DNA is the primary carrier of genetic information in almost all living organisms, and the information was discrete in every organism, which makes them identical. Initially, this is the core concept to understand design DNA, where the characteristics and attributes of the design were applied to be similar to the DNA concept. As an adaption concept, common DNA has chromosome and specific genetic attribute in completing the organism. In design DNA, it has the design level criteria instead, which contained three levels as the core profile. During the formation of the desired design DNA before the product's completion, it is compulsory to understand what and how to find the pioneer character or particular attributes that need to be filled in each level before actual design DNA was formed.

LITERATURE REVIEW

The Design Level Relation to Design DNA

This study compares the last two levels of visceral and behavioral that were discussed, and their methodology was founded in formulating the 'Visceral DNA' and 'Behavioral DNA' in the previous study. One of the core levels for design DNA is called 'the reflective', hence, it is also the third level of consideration for design identity development and here where the reflective aspect details for this study is discussed. The three levels founded by Norman (2004; refer to figure 1) are the set of level or particular concerns that designers or innovators kindly follow to form more structure, and it is considered the guided ways to proper design. Moreover, proper design is unlimited to appearance and considers design from the reflective point, which is the key to designing a sustainable and relevant design. As a primary level to focus on, the reflective level, especially in design terminology (reflective design), is related to the emotion, meaning, and intangible aspect within the circle of designer artefact (referring to the product before passing through production or manufacturing process) of the user. Norman (2004 et al.) described that at the process-level approach to product effect, the reflective design should be intellectual, referring to the consideration of the artefact or product that could be from some personal lesson, self-image and experience of the user.

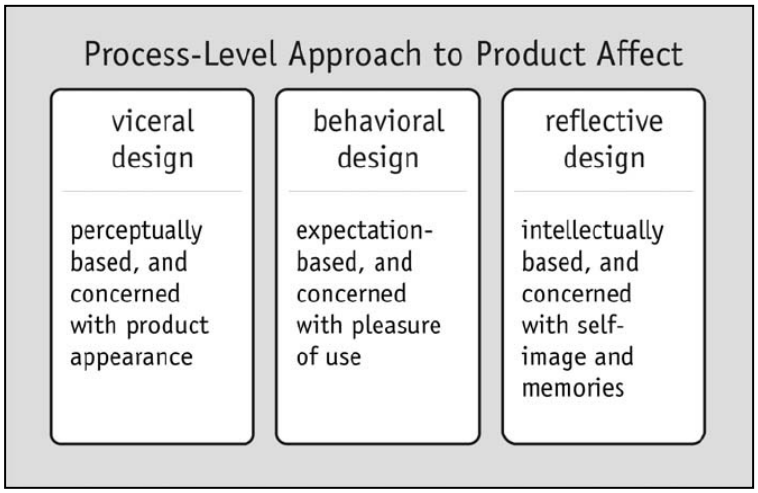

Figure 1: The Design levels

Design levels were applied and adapted in various fields in design, art, and innovation since its foundation in 2004 by assisting the designer and others to finding more exploration and formulation within the guideline. Before design DNA, one of the known research adapting this is Lin, R.T (2007), and his research has explored the significance of cultural product and how product specification could be categorized by adapting design levels. According to figure 2, referring to the cultural framework by Lin, R.T (et al.), it shows the synchronization between culture and design levels (design features). Directly to the reflective point, it stated that the horizontal bottom line has about a similar aspect between cultural layers, cultural levels and design features (design level). Those lines have their criteria related to emotion matter, intangible and affection to the user. The research aims to find and extract the content. Hence, the iconic profile that already exists in the cultural product can be adapted into the new concept of the product and still maintaining the cultural base elements and without leaving any core features includes the philosophy of culture behind the referred product. The design feature (design level) guideline facilitates the process, and the new concept product is formed with cultural identity. Therefore, this is where the design level for design DNA works as an initiative for designer and innovator searching for the origin of design identity.

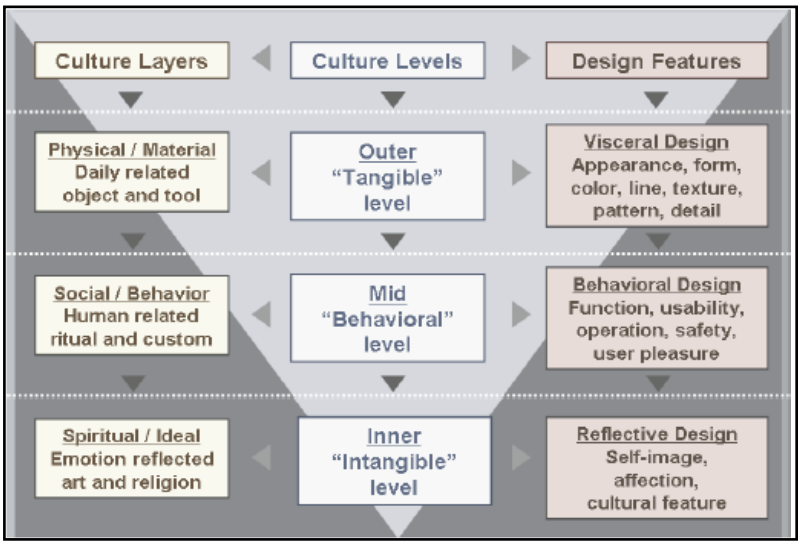

Figure 2: Three Layers and Levels of Cultural Objects and Design Features

The Reflective Design Concept

As mentioned earlier in figure 2, the reflective matter in design refers to the receiver or user's self-image, emotion, and experience. Initially, the reflective effect basically worked within the designer or innovator in initiating information, an artefact or product as an information platform, and the receiver is the user who interprets and responds to the information. This is the system of communication that involves a platform rather than direct communication between people. At this type of communication, the designer has formed their intention to create and develop some artefacts or products based on their idea. However, understanding the information depends on the user's actual interpretation of the artefact and product. The starting point begins at either the surviving product or artefact to be developed. Referring to figure 3, which is the pioneer graphical communication-based model, this model is seen as a turning up point to the other more key issue of communication's solution. The basic model shows that designers' interpretation and information delivered to the artefact are somehow interpreted discretely by the user or the receiver. The processing explanation states that the artefact or product actively transmits the product's value and passively gained by the user.

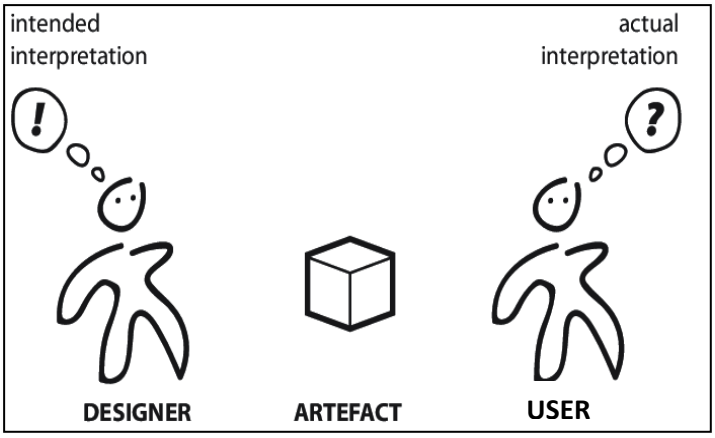

Figure 3: The Communication-Based Model of Design

From the reflective point, the communication-based model of design was adapted and translated into other systems by Schramm (1961); Maletzke (1981) and described in design model by Waller (1979) about 'the reflective depiction' or representation (refer to figure 4). The significance of the basic-model is that it maintains the main structure of three entities of the designer, the artefact or product, and the user with added initiation. It was fundamentally defined, as stated by earlier scholars, that the circumstances of the designer would express their ideas in a certain depiction and then, getting input from that representation.

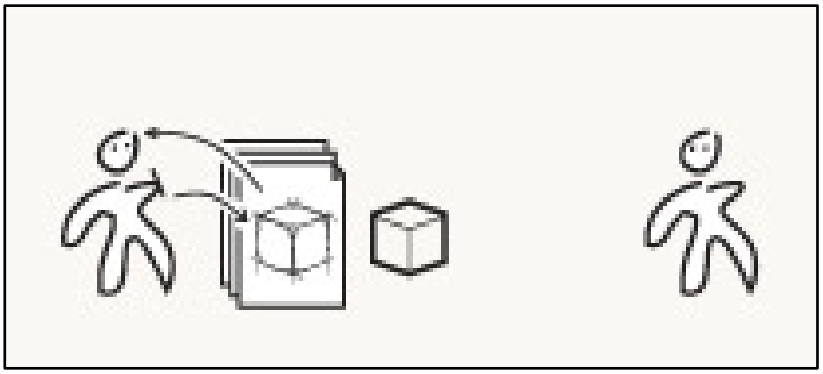

Figure 4: The Reflective Depiction

Furthermore, these reflective design DNA formulation ideas are non-about application to this core communication based but within other cross-definition to 'the collective production' in figure 5. This communication model idea was explored by Westley & MacLean (1966), and the Design models were figured by Krippendorff & Butter (1984); Coates (2003). The communication situation is defined as the designer representing a group who engages in artefacts' definition and development.

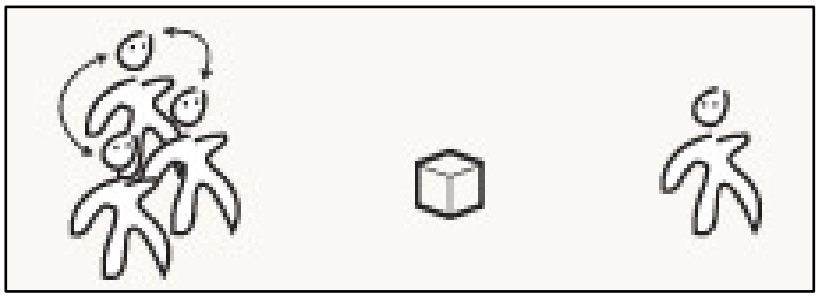

Figure 5: The Collective Production

To emphasize both types of communication-based model to form the process of reflective design DNA, the next model in figure 6 is structured for a pleasant understanding of which the entity is involved in formulating reflective design DNA for the user.

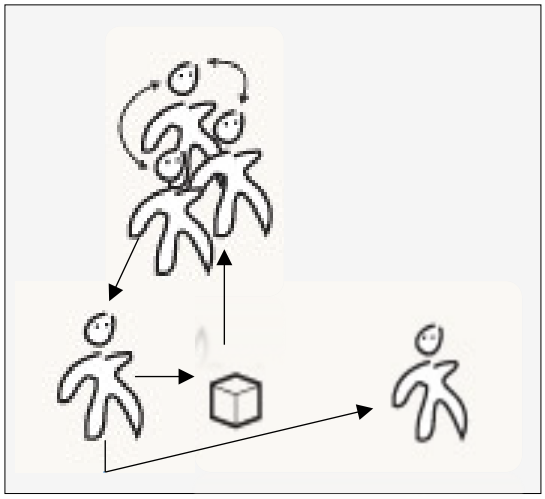

Figure 6: The Communication-Based Model Concept Idea

To add, the user in the respective model is the person who is going to adopt the DNA in trademarking or making the identity for their product establishment. In the design DNA, it has three parts to consider (visceral, behavioral, and reflective) to insert in the design, either to adapt the DNA in each or fully considering all those three parts. Regarding figure 6, the designer intends to prepare some collective ideas and samplings to be assessed and interpreted by the group of expert for refinement before the design is finalized (in this scope is the product maker). Therefore, the process of reflective design DNA is in the triangulation of the designer-artefact-experts and all procedures were revealed in the next phase.

Interpretation and Emotions Scale Over Product

The elaboration through artefact or product requires some acknowledgement and information before a decision was made. In this reflective context, the initial part is fundamentally related to common sense, representing human emotions upon examining artefacts or products. As involved in the part of designs and production disciplinary, the specific study of 'Kansei' theoretical is taking its place. The Kansei's is simplified as the study that focused on emotions and measurable feelings derived from the Japanese cultural philosophy words referring to the expression towards events, environment, and artefact. This disciplinary of mental systematized was founded by Nagamachi (1992), and other various disciplinary scholars spread its adaption. This study is essential to assist when it comes to the emotional and feeling respective study. It is categorized four kinds of aspects of interpretation perspectives, structured by steps 1) Sensibility, 2) Sensitivity, 3) Feeling, and 4) Emotion *(Nagamachi, 1992; Ishihara et al., 1993; Harada, 1998; Yoshikawa, 2000)*. The sensory system's support would reach all these particular aspect definitions as proposed and illustrated by Lokman and Nagamachi in figure 7. To emphasize, the process of Kansei's began with the sense from the 1) Cognition, 2) Vision, 3) Hearing, 4) Smell and 5) Taste, as illustrated in figure 7. It is the initial platform in receiving the data information before it was analyzed and interpreted into an intuitive sense of feeling and emotions. Way separated but linked to the process; the Qualia is the part of consideration after the first process. It is to identify the deliberate circumstances, subjective matter, and experiences related to peoples' mind.

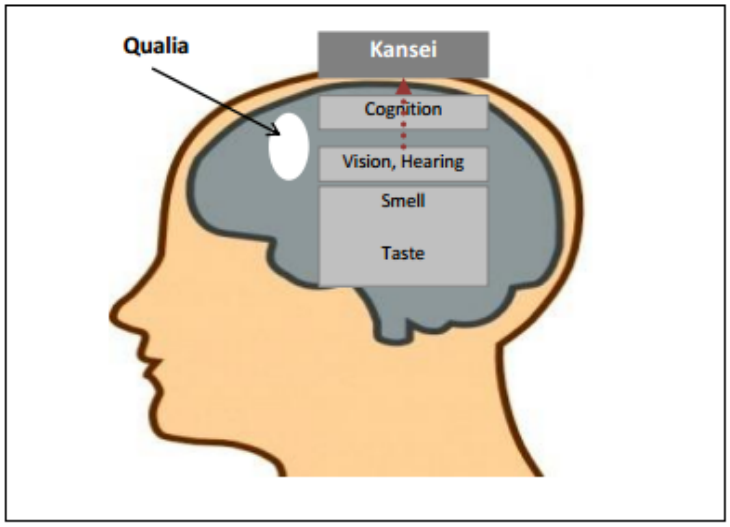

Figure 7: The Process of Kansei (Lokman & Nagamachi, 2009)

As part of the literature in Kansei's study, there was a study related to auditory system disciplinary to form the process of auditory information by adapting Kansei's interpretation process with a refinement of interpretation level details. Murakami. M & Kato. T (2011) found that each particular subjects or sample is essential to be interpreted by the level of consideration, known as the hierarchical model of the Kansei's interpretation (see Figure 8).

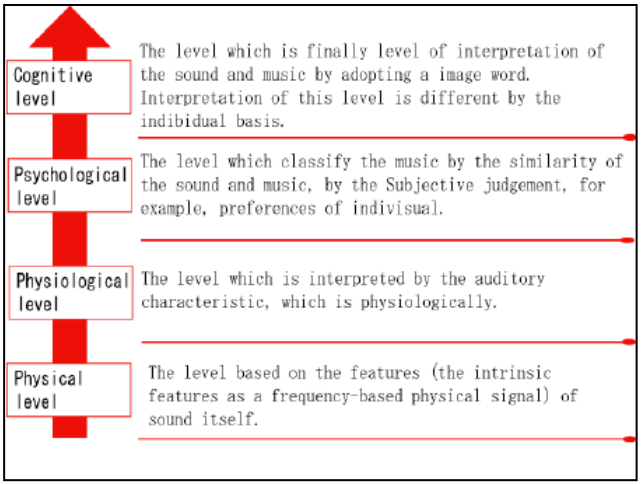

Figure 8: The Hierarchical Model of Kansei's Interpretation: An Example in Auditory Information Processing

The initial level to be interpreted by the interpreter or an expert for the reflective result is 1) the physical level, which the interpretation over the physical matter. For example, in design, it considers the shapes, lines and colors. In the next level, 2) the physiological is the interpretation over the characteristic or the mean of product. Next, level 3) is the psychological level of interpretation is referring to the preference of the interpreter to look at the samples holistically when it comes to subjective matter, and final level 4) the cognitive level is slightly discrete to the individual basic interpretation as it involves experiences that may come from the outsource adaptation and application over the samples. For these four levels, it flows in

interpreting subjects or samples, and the result from the interpretation is a core component in formulating reflective design DNA.

In finding the reflective result, the process involves individual basis emotional expression toward the subjects or samples that have been assessed. In other words, every one of the levels stated earlier was represented in the emotional base reflection. The emotion reflection appeared in various ways such as opinions, expression, and another subjective manner in delivering a feeling. In structuring and overcome the more measurable expression, the PrEmo is formed to assist this complexion.

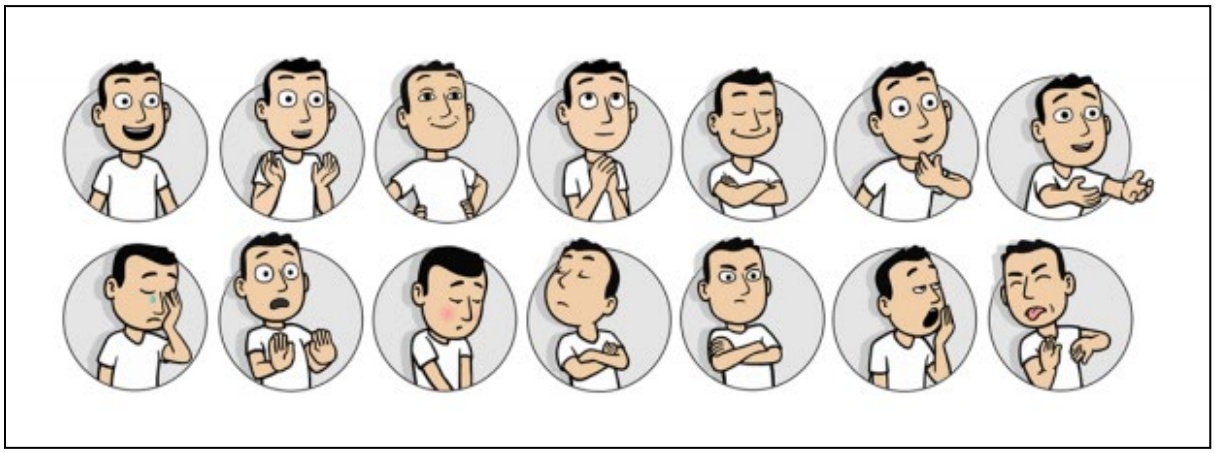

Figure 9: Set of Emotions in New Premo

It was found by Desmet (2003), and the sub-words of 'the Product Emotion Measurement Instrument' is defined as a non-verbal of a self-report instrument. It has 14 kinds of emotions representing feelings, categorised into pleasant and unpleasant kinds of emotions. At the early time of PrEmo's and the wider spectrum development and categorisation, it has the same kinds of 14 emotions (refer Figure 9) by Caicedo & Desmet (2009) into four split dimensional emotions which in 1) the social background, 2) the material sense, 3) Expectation and 4) Wellness. These 14 kinds of PrEmo's emotions work to answer to every interpretation over samples within Kansei's interpretation levels' guideline. The whole processes of reflective design DNA finding are explained in the following process.

METHODOLOGY

The Concept Process for Reflective Design DNA

Regarding all ideas in previous research, it assists and performs these concepts of formulating the reflective design DNA. As mentioned earlier, this initiative focuses on the reflective aspect of artefacts or products and purposely to identify the core reflective expression described in emotions as identical criteria, beneficially, to designer and innovator to find design DNA trademarking at emotions basis for product establishment. For this, all process flow is described in figure 10 as a guideline to formulate the DNA.

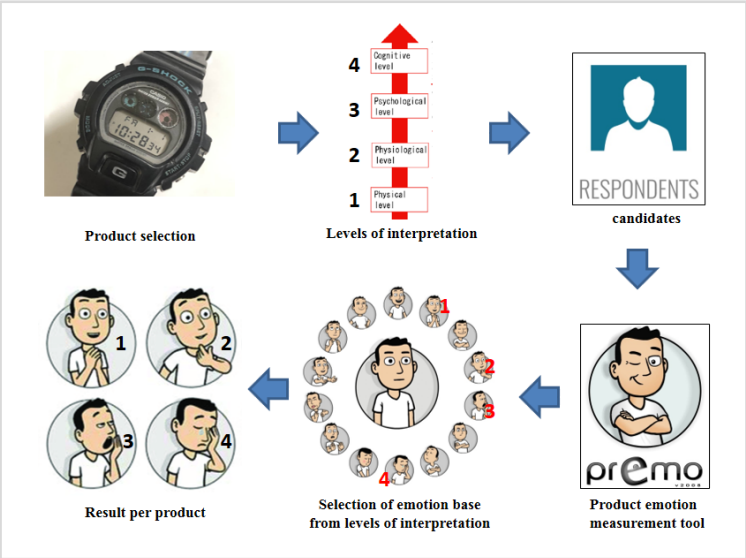

Figure 10: The Process of Product Interpreting As Phase before Finding Reflective DNA

At the first point, it stated 'Product Selection' as the sample of reference or simplified as themes for the concept design for their product. The sample of reference is selected based on the most dominant and preferred in the field, at least, more than one sample to follow DNA concept that acquires genetic algorithm process to have a new DNA (See Genetic Algorithm process at Misri, Izzuddinazwan, 2015**).** Next, 'The levels of interpretation' is proposed as a guideline for 'the Respondents' to interpret in a more structured way over each examined sample, whereas, from the level of Physical, Physiological, Psychological and Cognitive aspect interpretation. Continuing the interpreting process, the respondents must reflect their expression of the sample by using PrEmo without any other statements or opinion as their answer. Preferably, to have a population in result, the process is imperatively done in a set group of the respondents, and the fittest and most dominate emotions would be determined as the reflective aspect for design DNA.

CONCLUSION

Design is widely conducted in various fields, and it is unlimited to drawing, making, and creating. Previous research at this design DNA study explained that the levels of design have three level of main concerns to form the best design identity characteristic, partially, in this reflective aspect. The next step is the consideration over particular design levels, also seen as the designing guideline for criteria upbringing for the next concept of design trademarking that non-focusing at only outer appearance but includes the other part as mentioned in design levels. In the reflective aspect of designing, this intangible part as an intrinsic component in design is significant to ensure the product is interactive and generic to looks. Hence, other than the functions consideration in design DNA, the intuitive sense and meaning as part of product design DNA is necessary to capture user emotions and acknowledge the product identity at intrinsically at purpose for product sustainability.

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