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Form Exploration with Gist Method
A Case Study of Product Design

Devanny Gumulya [*1], Handoko Sutantio[2]

[1,2]Program Studi Desain Produk, Fakultas Desain
Universitas Pelita Harapan, Tangerang, Indonesia

Abstract
To be successful in today's competitive market, businesses must have a clear product recognition among their users. Consumers frequently have a wide range of products to choose from, making it difficult for a company's products to be discovered and remembered. An important factor is product recognition and how we perceive it through our perception, which is primarily an identification process that is based on familiarity, resemblance, or similarity. Product gist is a technique used by product designers to visually evaluate product forms during the design process. The study employs an exploratory qualitative approach with multiple case studies in three design projects. The findings confirm that the gist method can assist product designers in creating strong product recognition. The gist method assists designers in identifying key representations that can be kept, modified, or eliminated in order to create new product recognition through typological innovation.

Keywords
gist method, product design, product recognition

Devanny Gumulya
Email : *devanny.gumulya@uph.edu*
Address
Jl. M. H. Thamrin Boulevard 1100 Lippo Village Tangerang 15811 - Indonesia

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INTRODUCTION

To compete successfully these days, most businesses must have a clear identity toward their customers, users, and the surrounding society. A strong relationship between the company, its users, customers, and the surrounding society makes selling products and services easier [1]product design may be used as a central manifestation of brand identity. When creating and nurturing brand-specific product design, the act of \"encoding\" strategic associations to products is thus of central interest. From a company's viewpoint, the creation of strategic design language requires not only firm knowledge of the various product functions, typologies, and design references (in order to locate the domains of symbolic representation. The clear identity is needed because the competition in market is very high. Markets are frequently saturated by a constant flow of signs and messages from many brands in a high-competition environment. As a result, the creation and management of product recognition becomes a major communication goal. Companies have set out to accomplish product recognition in a variety of ways. Form recognition is one of these, and it has been proposed as a key component in developing a strong design aesthetic for a brand [2].

Product recognition through product design has become constant subject research both by the academics and the professional world. According to Borja Mozota (2011, p. 110), products convey a message, and the combined effect of several individual products results in a mix of interactions that can be viewed as a construction of meaning (connotation) that users can interpret (denoted). In addition, it became evident that products should be viewed not only as a means of fulfilling needs or trying to maximize individual use, but also as a form of communication [3].

Furthermore, [4], [5] asserts that product recognition can be achieved through various design stimuli, such as different visual form elements or colors, which are handled at different stages of the perception process. Furthermore, perception is componential rather than holistic, suggesting that an audience may imagine previously unseen combinations of concepts and assign meaning to such concepts [6]. Because consumers are familiar with two products in the same category, they can assume what a third one might look like. Additionally, cognitive semiotic theory states that recognition (meaning-making) through design can be described as occurring through sign references that are iconic, indexical, or symbolic in nature. Product recognition, for example, is created by constantly applying similar visual form elements or design cues (iconic references), whereas product associations, such as sportiness, are created through symbolic references.

In design research today, researchers mainly focus on affective and semantic design issues, investigating the relationship between users and the products [1], [2], [7]product design may be used as a central manifestation of brand identity. When creating and nurturing brand-specific product design, the act of \"encoding\" strategic associations to products is thus of central interest. From a company's viewpoint, the creation of strategic design language requires not only firm knowledge of the various product functions, typologies, and design references (in order to locate the domains of symbolic representation. We conclude that there is a knowledge gap in investigating the design process of creating product recognition and how to design which form has the strongest recognition.

Product gist method is proposed by [8] as method for designers to visually evaluating product forms in a design process. Hence, we raise of research question: How do design students explore form with the gist method to achieve strong product recognition? In this paper, three product design projects are discussed.

Theory of Signs

Peirce's theory of signs offers a potential entry point for the product gist method [8]. According to the theory, signification (the attribution of meaning) is a triadic relationship between a representamen (a perceptible object, R), an Object (of reference, O), and an Interpretant (the effect of the sign, I). Through this triadic interaction, meaning is created. In the context of design, R can be thought of as a design feature that acts as a manifestation of the sign through its properties (e.g., form,

shape, color), whereas O refers to an object with which the design element has a reference relation (Figure 1). Specific design features of Nike running shoes (R), for example, can be a manifestation of the Nike brand's dynamic orientation (O). The subjective realm of the interpreter and the environment in which he interpretation is made comprise the context of interpretation (I).

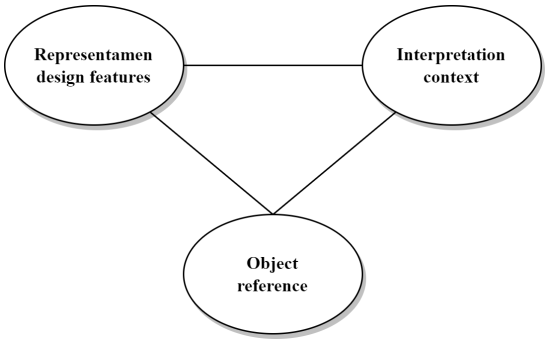


Figure 1 Pierce R–O–I Framework

Gist Method

The visual part of the brain organizes the input of the eyes from the experienced environment into patterns and uses these patterns to guide us. Getting the gist of a situation is referred to as capturing it [8].

"The activation of meaning by an image occurs in a fraction of a second, significantly less time than it takes to read a paragraph of text. This instantaneous activation renders images far more efficient at conveying certain types of information than words." (Ware, 2008 p.12)causing the pole inequality relations between men and women. Therefore, in this study wanted to dismantle the detail view of some theories, both social and feminist about gender relations in the family. Each of these theories (structural functional, conflict and feminist.

Figure 2 Gist Method

Gist method starts by layering multiple images on top of one another, by layering multiple images, the product sign will appear objectively. Product gist method steps recommended by [8], [10]:

1. **Identify** the product category
2. **Collect** a sufficient number of similar images
3. Create common **references** in the images; this will allow you to manipulate the images so that they are all the same size.
4. **Manipulate** the images so that they are all the same color, chroma, and saturation. Make the background of each image transparent and create a white background image. Check that all of the images are pointing in the same direction. Scale the images as needed until the references in step 3 match.
5. **Trace** the prominent form that emerge from the multiple layers

Typological Product Innovation (TPI)

TPI is one of product design innovation type from [11] research. She states there are five types of innovation: function, aesthetic, meaning and typological. The variation of a product from its conventional archetype is referred to as typological innovation. People have been making different of appropriate forms for certain purposes since ancient times, according to Heskett (2002). As a result, some of these forms are so well suited to specific needs that they have become archetypal (for instance, the shape of a chair, a glass or a vase, a glass). Nonetheless, the forms of objects evolve over time as a result of new technological advancement, cultural changes, and so on. This results in the development of new archetypes.

The fact that a formal archetype absolutely matches a specific purpose is not the only reason for its consolidation. The form of a product can also become archetypal because of industrial decisions. This is true when it comes to establishing a product's prevalent architecture. It represents to the concept of "dominant design," which Abernathy and Utterback introduced in 1978. A dominant design is defined as a product's basic structural design that has become the acknowledged market requirement in a particular product category. According to [13] , a dominant design is one that earns the market's loyalty. If competitors want to gain a significant market share, they must refer to it. First, firms experiment with various solutions prior to the emergence of a dominant architecture. Once a dominant architecture has been recognized, product variety tends to diminish, and incremental innovations based on the same architecture tend to follow one upon the other for a time [14]design is recognized as a strategic resource. Customers are increasingly paying attention to the aesthetic, symbolic, and emotional value of products, a value that is conveyed by the design language - that is, the combination of signs (e.g., form, colors, materials. As a result, all products in each category tend to be similar: for example, desk fan, headphones, refrigerators, televisions, and cell phones. In this regard, industrial design can play an innovative role by proposing revolutionary new solutions and put these solutions into action through new forms that were previously unthinkable but have now become evident. The most successful forms are transformed into new formal archetypes. As a result, products that come from typological innovation are always easily recognizable.

Figure 3 Typological Innovation Example (top left: LaCie USB Hub, designed by Ora-Ïto, top right: Zanotta's Sacco armchair, bottom: Grillo telephone for Sit-Siemens Italiana)

Rampino (2016) provides example of typological innovation: Ora-Ito for La-Cie USB hub (see Figure 3) because it has a circular base that allows it to spin in all directions. Several design awards were bestowed upon the product. Zanotta's Sacco armchair (see Figure 3), and Zanuso and Sapper's Grillo telephone (see Figure 3) for Sit-Siemens Italiana are other examples of products that, once on the market, created changes to the dominant formal archetype. The Sacco armchair, for example, has an unstructured structure that embraces the user as they sink into it when they sit. It is a revolution in comparison to traditional armchairs.

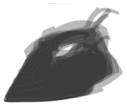
METHODS

The study uses an exploratory qualitative approach with multiple case studies to investigate the implementation of the gist method in three design projects. Because the research questions have not been thoroughly investigated previously, the study is exploratory in nature [15]. There are three stages to the research process. The first stage focuses on literature review on the gist method and its theoretical roots in Charles Pierce's Theory of Sign. The second stage focuses on applying the gist method to three different design projects. The third stage focuses on experimenting with the product form based on gist analysis and develop new typological innovation.

DISCUSSION

The product gist method is applied on three different design projects made by product design students. The first student decides to redesign iron; the second one redesigns toilet water spray; and the last student chooses electric blender. The results are elaborated according to gist method steps.

Table 1 Gist Method

Gist method steps	Student 1	Student 2	Student 3
Identify	Iron	Toilet Water Spray	Electric Blender
Collect	  	  	  
Common references			
Manipulate			
Trace the most obvious form			
Gist Analysis	From the traced online we can see that sweeping handle and protruding nose are the key representamen of electric iron	From the traced outline we can see that the handle and the spout are the key representamen of the toilet water spray	From the traced outline we can see that the handle, the base and the slim container are the key representamen of the electric blender

After identifying the key representamen of each object. Each student is tasked to explore the form and create typological innovation. Through gist analysis students know the key representamen that make the object relate with its architype. Students can eliminate those signs and replace them new with new design features or they can modify the key representamen. The three students take different approaches, one modifies and the other two eliminate the key representamen.

1. Maintain and Modify The Key Representamen

The first student attempts to modify the design by removing the back part to create a lighter look, as the current look is quite bulky. The student still maintains the two key representamen which is the sweeping handle and the protruding nose.

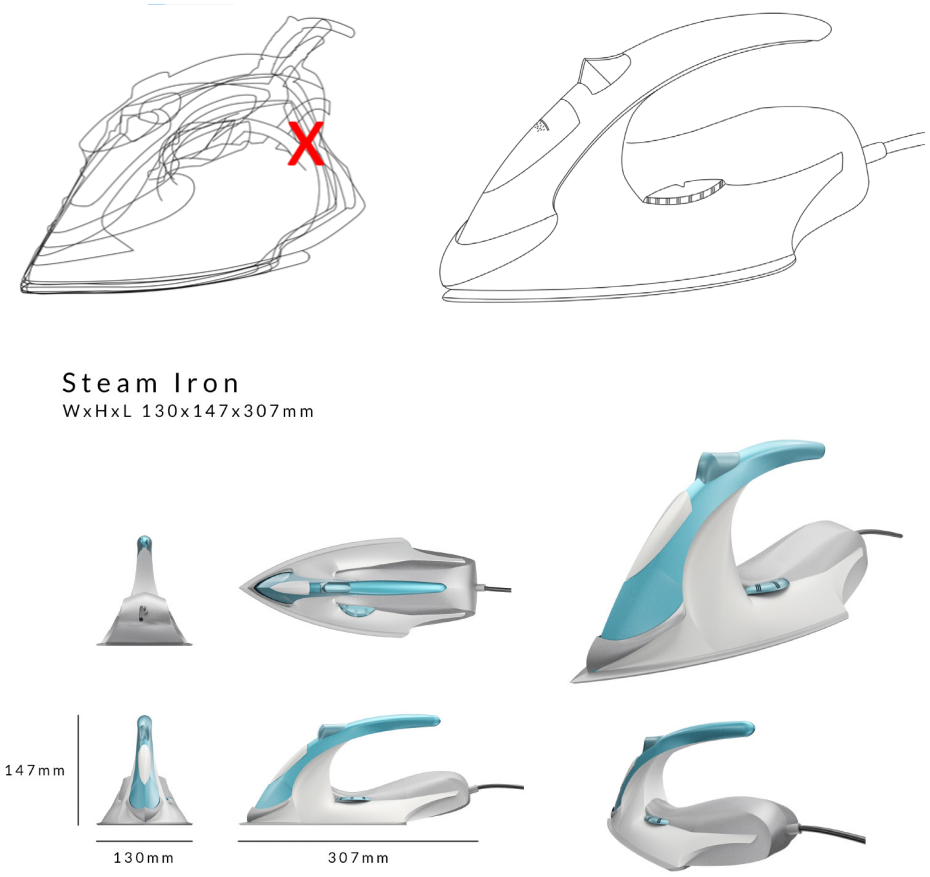


Figure 5 Modifying key representamen

2. Eliminating The Key Representamen

The other two students try to eliminate the whole key representamen and create new form that provide new way to operate the product. The second student redesign the toilet water spray by removing the handle and the spout. The handle is replaced with a button put on the front and new form for the head. As mentioned by [11] that typological innovation need longer time for market adaptation than any other type of product innovation.

Figure 6 Eliminating key representamen for redesign toilet water spray

The third student eliminate the handle and the base of blender and move the machine from the bottom to the top.

Figure 6 Eliminating key representamen for redesign blender

CONCLUSION

The results are we confirm that gist method can help product designer create strong product recognition. Furthermore, the study able to answer the research question : How do design students explore form with the gist method to achieve strong product recognition? Design students can do gist method by overlaying images of products from the same product segment Gist method is proved to be an intriguing way of discovering new design features and becoming aware of similarities and differences in previously known key representamen. By knowing the key representamen student can modify or eliminate them to create novelty by giving new product recognition. Students can do form exploration quickly and effectively using the gist method because they are already identify the key representamen to be explored. The study case proved that gist method can serve as design method to help designer do typological innovation, the rarest form product design innovation mentioned by [11].

The study also discovered several gaps in the gist method. We discovered several limitations after applying the method. For starters, it can only be applied to products that already have archytpes. Second, the overlaying technique is only applicable to products with iconic shapes; smaller, more detailed products, such as decorative patterns, cannot be analyzed using the gist method. Third, the gist method only works for styling design projects, but in real life, there are many factors that constrain the design project, such as technical components and cost.

However, the study successfully demonstrated that the gist method can assist design students in doing form exploration and creating typological innovation in a more efficient and effective manner. To evaluate the gist method, future work would include testing it on a diverse set of people and product segments.

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