

Application of Metaphors for Integrating New Meanings of Cultural Art Features into Modern Products: Insights from Thailand

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Abstract

Metaphor is a valuable tool for facilitating innovative product design. Metaphor facilitates designers' comprehension of design concepts by illustrating comparisons with their existing knowledge. Limited research exists on how metaphors transform cultural art characteristics into product designs to convey consumers' understanding of value meanings from cultural art features in modern products. To address this, a conceptual framework was developed as a diagrammatic tool for design strategy, based on the concept of metaphor. The framework assists designers in interpreting the appearance, behavior, and meanings of cultural art features, enabling their incorporation into contemporary products. The translation, transformation, and design activity processes were used to demonstrate how this framework could embed new meanings into modern products. From different perspectives, the use of metaphors to bring cultural art features into modern products is beneficial for enhancing creativity in product design and enabling consumers to better understand the product's values.

Keywords: Metaphors, New meanings, Culture design, Three cultural levels, Product design.

Introduction

Metaphor is not only a pattern of communication and writing but also a useful way of thinking in daily situations (Lakoff and Johnson, 2013). It is believed that the fundamental characteristic of creativity is the ability to combine two things from different domains in a novel way (Lubart and Getz, 1997; Tan, Wilson and Olver, 2009).

The significance of metaphors in product design has been acknowledged for a long time (Hey and Agogino, 2008). Earlier stages of conceptual design frequently employ metaphor to find solutions or interpret meaning creatively. Beginning with a design stage objective and moving through ideation, evaluation, and finalization, conceptual design can be described as the process of setting an objective, searching for sources to find pairs of the target and the sources as possibilities, and choosing the best one from these options. In earlier research,

Casakin (2016) found that metaphors can be used to identify and describe design concepts, as well as to define needs and objectives. In a series of studies (Hey and Agogino, 2008), it was discovered that metaphors were most beneficial during the "conceptual design" phase of the early development process, while individuals were attempting to come up with new ideas.

Despite its importance, there have been few previous studies on the creative ways that metaphors have incorporated elements of culture art into novel product designs to communicate to consumers who pay special attention to the aesthetic of cultural products (Moalosi, Popovic and Hickling-Hudson, 2008; Irwin, 2015). Additionally, developing products that highlight regionally specific cultural features has the ability to satisfy the cultural preferences of individual customers (Twigger Holroyd et al., 2017). In this context, the concept of local cultural art characteristics has been generally accepted as a documented basis for evaluating and defending whatever parts and products that emerge from such a community's cultural conceptions, traditions, and behaviors. Therefore, this research develops a new theoretical model for the metaphor design process of products as a diagrammatic instrument for practical implementation to assist designers in translating and integrating cultural art characteristics into contemporary products. To use a metaphor, metaphorical products can assist individuals in comprehending how value meanings of cultural art features are integrated into modern products and lead to internationalization that is culturally sustainable and protects native identity and culture (Yu and Dong, 2019).

Theoretical Framework

1. Metaphor Design

Lakoff and Johnson (2013) were the first to explain how metaphors facilitate learning, including how they function and how they are constructed. The theory has inspired a significant number of research projects that investigate the connections between cognitive roots and multidimensional manifestations (Forceville, 2002). People acquire new knowledge and gain new experiences on a daily basis by making comparisons, either intentionally or unknowingly, to the information that they already possess. In a similar manner, metaphors are responsible for the formation of a significant portion of what people know about their way of life. Design products, in their role as cultural transmitters, embody cultural meaning and alter people's perspectives on the world through interaction processes such as using those products. Metaphorical design, as described by Fauconnier & Turner (2008), is an input and target mapping process that yields novel interpretations and understandings. When people attempt to complement how much they realize about the input to what those that understand about the target, they find certain aspects of both while downplaying others. People are able to gain a deeper comprehension of both aspects through this method. This leads to innovative implementations as well as a deeper degree of interpretation (Hekkert and Cila, 2015).

Product metaphors are defined by Hekkert and Cila (2015) as "every other product whose design purposefully mirrors the distinctive qualities of the target product." (e.g., color, shape, motion, etc.) of another thing for specific expressive objectives. Product designers are a sort of creative artists who often use metaphors to make their products more meaningful and appealing. During the design phase, designers may employ metaphors as a technique or method to assist in identifying, framing, and solving design difficulties (Casakin, 2011); transcend the constraints imposed by idea similarity (Kreitler et al. 2009) and support design conclusions (Madsen, 1994). They might also use a metaphor in the process of shaping the final outcome in order to communicate the significance and importance that they attach to the product. This particular usage of metaphor is helpful to designers because it enables them to translate ideational concepts into exact product features (Hekkert, 2006; Van Rompay et al., 2008). These attributes, in turn, communicate to consumers the social psychological, and cultural meanings associated with the product. For example, the attractive shape of the garlic bulb serves as the mapped model for Ajori (Figure 1), a creative approach for arranging and preserving spices, seasonings, and various gourmet condiments. This kitchen item has six compartments that carry various materials used to season a variety of dishes, adjusting to the various culinary customs of each nation (Vinas, Jimenez and Balsalobre, 2012). Its exquisite organic design

makes it a sculpture that can be used as a table decoration or to initiate a conversation. Its shape, which looks like a clove of garlic, also makes it a good way to convey the meaning of the various health benefits of well-known garlic.



Fig. 1: Garlic designed metaphorically mirrors the distinctive qualities of the condiment container
Source: Author

To gain knowledge about how to metaphorically correlate cultural art aspects and current products through integrated design products, in-depth research is required. However, cultural art characteristics are rarely discussed from the metaphorical methodology to the conceptual design stage, although they represent critical components to support both practical and creative design. According to the initiatively findings of the study, products that metaphorically communicate aspects of cultural art with modern life might persuade consumers to define the cultural value of cultural art characteristics from a novel vantage point, considering the cultural influences that can be considered sustainable. The culture in general may stand to benefit from such an initiative. To put it another way, cultural goods are able to accommodate the requirements of contemporary living while at the same time protecting the distinctiveness of the indigenous culture (Lin, 2018).

2. Culture Design and Metaphors

Culture possesses the power to gain influence through every facet and domain of people's lives (Hofstede, 2001). When designers begin work on a new design, the very first step they have to do is to determine the requirements that clients will have for a particular product (Noble & Kumar, 2008). It is essential, when going through the process of developing a product, to take into consideration the "needs and wants" of the potential customers, as these aspects influence the particulars of the product that is being designed. The expectations of the consumer that is being focused on the influence of a variety of aspects of the product requirements. These aspects include but are not limited to, the product's shape, appearance, components, efficiency, endurance, applicability, pricing, and so on. For metaphors in cultural design, Forceville (2008) assert that metaphors can range from basic or visceral metaphors to taught, cultural, or imaginative metaphors. Whenever a target resource correlation is predicated on innate knowledge acquired through experience with the world, the resulting cultural metaphor is embodied; if it relies on cultural experience and expertise accumulated over a period from the culture in which we reside, the metaphor is learned.

3. Three Cultural Levels

Lin (2007) has developed a structure for culture that is made up of three layers, with each layer reflecting a different aspect of culture: products, values, and fundamental beliefs.

These layers could be notified apart by their own crucial design features, which can be beautiful, useful, or have a special meaning. Leong and Clark (2003) proposed a model for the study of cultural products that are distinguished by three distinctive levels: the outer level, the middle level, and the inner level. Siu (2005) provides more indications for the structure of the outer, middle, and inner. This approach aligns with the three different levels that Leong and Clark proposed. The outer level, which corresponds to the tangible category, is related to the material level and is made up of visual elements and crafts. The middle level, which is related to behavioral activities, is meant to connect the outer level to the inner level. The inner level, which corresponds to the intangible category, is the key value and is very important for encouraging individuals to think and reflect on culture.

On the basis of the research conducted by Lin (2007), Siu (2005), and Leong and Clark (2003), the study proposes a three-level model of culture, which is graphically summarized in Figure 2. According to this model, culture may be divided into the following three levels: 1) The outer level that is visible and touched, based on appearance characteristics such as form, shape, color, and texture, among other characteristics. 2) The middle level, which includes functionality, usability, and performance but cannot be touched by the user. This level is visible but not touchable. 3) The inner level, which is invisible and non-touchable, referring to affection, conception, and beliefs.

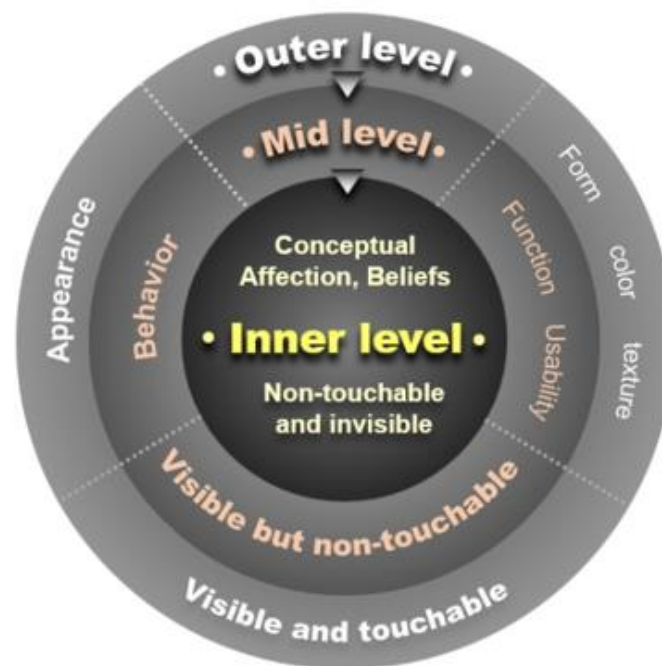


Fig. 2: A three-level model of culture
Source: Author

Conceptual Framework

Figure 3 develops a conceptual framework for encouraging the design process of metaphor products, which is adapted from the methodological approach of metaphorical design (Qin and Ng, 2020) and the cultural framework (Siu, 2005). By merging design products with cultural art characteristics, designers can create new cultural product meanings through metaphorical matching. Siu's (2005) and Qin and Ng's (2020) cultural theories are adopted to emphasize the crucial layer of tangible and intangible features between cultural art aspects and modern products. A new cultural product meaning is generated whenever there is a successful match between the target components of contemporary products and the source parts of cultural art features. This hypothesis is based on the research findings of Chow et al. (2016) indicating

that new meanings were merged when users identified the source and target of cultures in creative product designs and concepts when operating within a bicultural framework.

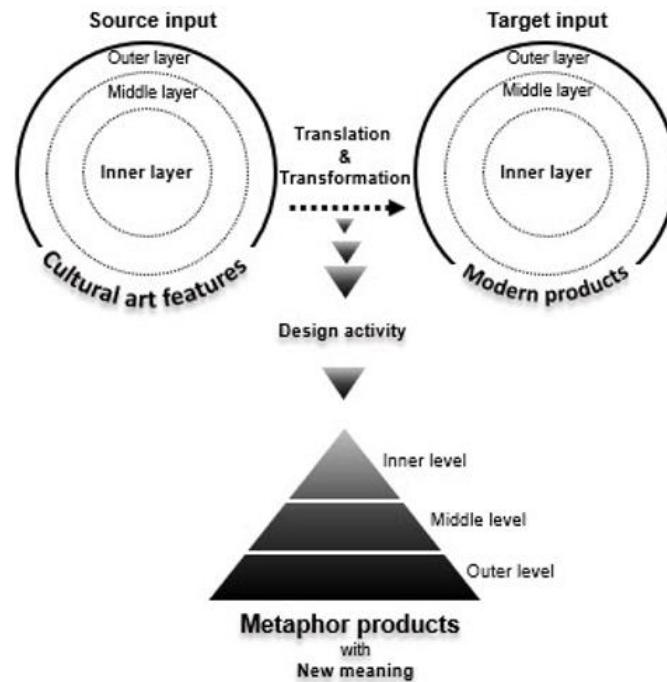


Fig. 3: A conceptual framework of design process for metaphor products
Source: Author

1. Source input

Metaphorical concept usually clarify things and easier to understand by referring to how familiar the primary source is (Forceville, 2002). Individuals may endeavor to figure out how an unusual product works by making comparisons to something they know and use every day. Forceville (2008) says that design products are physical things that let both the source and the target inputs currently reside with each other in a way that is both distinctive and complementary. This is not the same as a verbal metaphor, which is just a set of words that sound alike. The forms, shapes, and colors that can be seen on the hybrids make both the target and the source input clearer. Even though most people in the modern world don't recognize much about cultural art, making hybrids that relate cultural art aspects to new products can help people understand cultural art features better (Blackwell, 2006).

2. Translation and transformation

In the process of translation, the source material is the starting point from which the cultural elements are investigated. These attributes include features that are connected to the outer level of shape, color, and pattern; the middle level of function and usability; and the inner level of feeling, conception, and beliefs (Lin, 2007). Through the application of the scientific approach as well as several other methods of investigation, the designer can be capable of obtaining design data out of a cultural art feature according to this extraction process. Following the completion of the information extraction process regarding the design, the designer may next proceed to assess and use the gained knowledge.

During the process of transformation, design knowledge is obtained from the design knowledge that is discovered through the process of translating cultural features. The designer gains extra information regarding these design characteristics and greater experience working with them as the process progresses. In addition, he or she is able to utilize this design expertise to transform cultural art elements into three levels of design products, which helps them comprehend how cultural appearance, behavior, and meanings all engage together.

3. Target input

To focus on creating and using modern products, a designed item with features that are new to modern products could be seen as a target input for user acceptance and comprehension. People are more likely to think about their lifestyles and come up with new concepts when cultural art aspects are used as source elements in modern products (Chang & Wang, 2020). Contemporary products can be divided into three levels that reflect the tangible and intangible components of modern life. This is similar to how cultural art can be divided into three levels of the source input.

4. Design Activity

Throughout the design activity, the consequence of the processes of source input, translation, transformation, and target input is taken into consideration. At this point, the designer uses all levels and components of cultural art to produce a metaphorical product through engaging the conceptual design and prototype model.

4.1 Conceptual design

The objective of conceptual design is to create a design that lays the groundwork for a production-ready design. It is a tool that a designer uses to figure out and show visually what the design's main ideas are (Liu et al., 2015). Conceptual design helps the designer show how they want the final product to appear and what they intend for it to accomplish. The goal of this step is to make a textual and visual sketch of an idea based on what came out of the translation and transformation process. During this process, the meaning of the cultural art characteristic may need to be changed and adapted to match a modern product.

4.2 Prototype model

The prototype model is the most dependable approach to demonstrate the intended functionality of a product, and it can expose any level of detail (Ulrich & Eppinger, 2012). This model assists the designer in comprehending how things should appear and function to accomplish the objectives predicted during the decision-making process. Throughout this phase, a prototype model is used to evaluate the results of the conceptual design's metaphorical product concepts.

5. Metaphor Product with New Meanings

Steen (2002) studies demonstrate that the primary goal of using metaphors is to merge two different concepts or ideas that are not related to each other in order to come up with a new hybrid idea or concept. The metaphorical idea is also strengthened by meaningful connections that come from each person's own life. This is caused by the fact that a person's complete conceptual metaphor matchings are founded on individual experience, which corresponds to physiological practices and behaviors (Gibbs et al., 2004). The physical outer-level linkages to the middle level and inner level serve as the basis for the metaphor connecting the intangible level to contemporary products. When there are levelled connections between the physical and the conceptual, users are encouraged to comprehend cultural meanings through the perspective of their individual life experiences and ideas.

Case Study

The Blessing

Modern products' designs need to inspire positive emotions as well as be functional and aesthetically appealing. As a result, a holistic design approach must attempt to consider both the tangible and intangible aspects of three different cultural levels. The following case study illustrates how elements of cultural art can be incorporated into modern product designs:

1. Source input

Benjarong (Thai craft) and Benjatath (Chinese wisdom principle in five elements)

Benjarong (Figure 4) literally translates to "five colors," however the majority of the Benjarong's colors range from five to more than eight different hues. Red, yellow, white, black, green, or blue is the principal colors utilized for the Benjarong. Other options include silver and gold. Benjarong can come in the form of a wide variety of utensils, including bowls, plates, jars, spoons, potties, teacups, tableware sets, and so on. The production of Benjarong is an occupation that involves high-quality handicrafts, and it provides many important benefits to the surrounding community. These benefits include the preservation of Thai art and cultural heritage.



Fig. 4: The cultural art features of Benjarong
Source: personal documentation

Benjatath, one of the principles of traditional Chinese philosophy, is known as "the five elements," which refers to "Benjatath" in Thai. According to traditional Chinese wisdom, all things, regardless of how concrete or abstract they may be, could be broken down into the five elements of Earth, Gold, Wood, Fire, and Water, with each element possessing its own unique potency. These five elements can be used to categorize colors; Yellow, orange, and brown are the colors that belong to the "Earth Element"; The colors white, gold, and silver are all associated with "Gold Element"; The colors that represent "Wood Element" are various shades of green; The colors that represent "Fire Element" in colors are various shades of red, magenta, and pink; "Water Element" has the colors of blue and black as their primary colors. In addition, shapes are used to symbolize each element; The square is used to represent the "Earth Element"; The circle is used to symbolize the "Gold Element"; The semicircle is used to symbolize the "Water Element"; The triangle is used to symbolize the "Fire Element"; and the tall-shaped rectangle is used to symbolize the "Wood Element". In addition, as illustrated in Figure 5, each of them is related to the others in both positive and negative relationships.

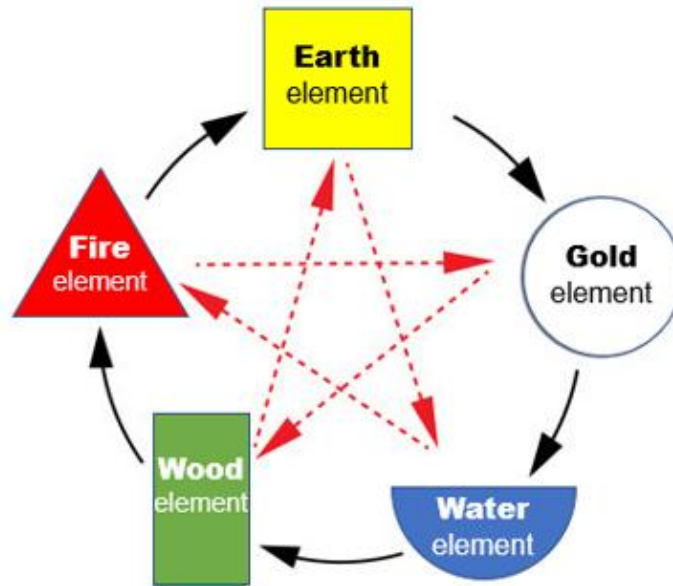


Fig. 5: The cultural art features of Benjatath

Source: Author

2. Translation and transformation

In Translation process, Benjarong and Benjatath are both included in the source input, the creative bicultural thinking process of Chen (2018) was adapted into a four-step process for translating cultural art features into new modern products. Firstly, the context of two cultural art features needs to be clarified. Secondly, a survey of similar types of two cultural art features in different features needs to be carried out. Thirdly, a comparison of the differences and similarities of two distinct cultural art features must be undertaken. Finally, the differences need to be negotiated and combine the aesthetics, practicalities, or ethos of two different cultural art features in order to come up with innovative ideas and styles.

To clarify the two cultural art features, on the ground of Benjarong and Benjatath's source input, it can be clarified that five colors and patterns characterize Benjarong, whilst five elements identify Benjatath.

To find similar types of two cultural art features, according to their respective origins, the words Benjarong and Benjatath share a common meaning: "Five." Benjarong is derived from the terms "Benja," which means five, and "rong," which means colors; therefore, it means five colors. Benjatath is derived from the also terms "Benja," which means five, and "Tath," which means elements, so Benjatath means five elements.

In comparing the similarities and differences between Benjarong and Benjatath, based on the prior translation and creative bicultural thinking process, Benjarong and Benjatath share one common of the "Five colors," while Benjarong has differences in various patterns, and Benjatath has differences in five elements.

In the negotiation process, according to the study, despite the fact that five colors are shared by both cultures, they have different contexts. The patterns of the Benjarong use five colors to create a unique and attractive design. Nowadays, over five colors are utilized such as gold and silver rendering Benjarong more desirable and precious. Therefore, the general public may be unable to discern what the five colors of Benjarong are. Moreover, the patterns seem to be considerably more apparent than the colors. In contrast, Benjatath's colors signify elements and share a concept of cohesion such as green denoting the wood element. Therefore, the study validates Benjarong's patterns and Benjatath's five colors in integrating and combining two distinctive cultural art features.

Not only do the five colors of Benjatath correspond to the five elements, but they also have auspicious meanings (Cho, 2021). The red of the fire element signifies fame and honor,

the yellow of the earth element indicates glory and steadiness, the blue represents intelligence and wisdom, and the green represents growth and prosperity, whereas the white of the gold element represents success and triumph. When comparing the meaning of Benjatath to color theory (Chapman, 2021), according to Table 1, it is evident that there is a link between them and that they share some certain commonalities. Therefore, it can be argued that people may interpret and comprehend the auspicious meaning of each five colors of Benjatath.

Table 1: Comparing color meanings of Benjatath and color theory

Source: Author

Element	Color	Benjatath Meaning	Color Theory Meaning
Fire	Red	Fame, Honor	Passion and Energy
Earth	Yellow	Glory and Steadiness	Happiness and Sunshine
Water	Blue	Wisdom, Intelligence	Calmness and Reliability
Wood	Green	Prosperity, Progress	Growth and Abundance
Gold	White	Success, Triumph	Purity and Hope

Finally, the translation process is capable of identifying and combining the two distinct cultural art features into two characteristics: The first one is a pattern of Benjarong and the second one is five colors with the auspicious meaning of Benjatath's five elements.

In transformation process, based on the results of the translation process, a pattern of Benjarong and the five colors of Benjatath must be transformed in order to progress to the next step of conceptual design and prototype model making. In transforming the pattern of Benjarong, It was then transformed into a black-and-white graphic pattern that could be modified and transformed into the combination of five colors and patterns shown. in Figure 6.

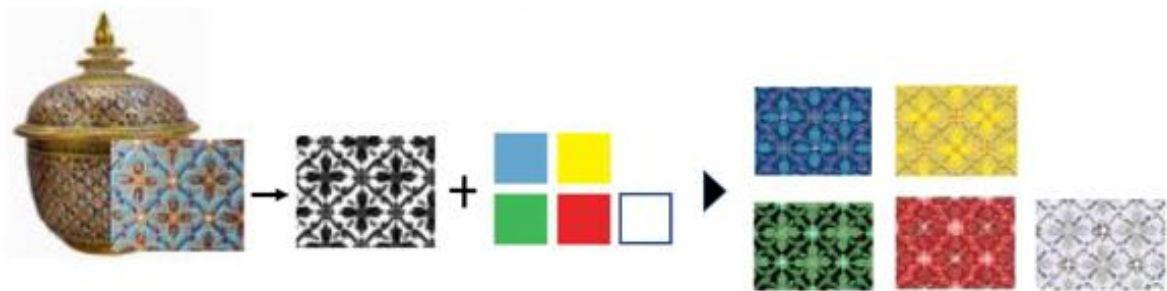


Fig. 6: Transforming the Benjarong's pattern into the combination of the pattern and five colors.

Source: Author

3. Target input

As a consequence of the previous processes of source input, translation, and transformation, desk lamps were developed as a modern product that functioned as the target input in the form of festive gifts that will be blessed to each other, or souvenirs to remember the good things from one's journey or travel to other places and bring back to loved ones or themselves with the auspicious meaning built into these products.

4. Design activity

4.1 Conceptual design

In order to preserve this case's title, "The blessing," the conceptual design was developed and designed. The study found that, according to belief, scattering flowers is a sign of respect, faith, praise, and honor for nobles or those who frequently perform good deeds; moreover, it is a blessing against disaster or misfortune and a wish for eternal good fortune.

The design of Benjarong's patterns is commonly influenced by many types of flowers, including jasmine and needle flowers. Because of this, the study enlarges and reduces the Benjarong flower pattern and rearranges it as if it had fallen from a blessing with the act of an

angel scattering flowers from the sky and as if it were similar to the scattering of various colored papers dropped from the crystal ball over Times Square in New York City to mark the end of the year. As illustrated in Figure 7.



Fig. 7: As a blessing, flowers and various colors of paper are scattered from above
Source: Author

The conceptual design is applied to the lamp's three primary components. At its top, the lampshade reflects the metaphor of blessing through the scattering of flowers. The light emanating from the lamp represents the means through which the blessing is transmitted to the users. The vase-shaped lamp base portrays the auspicious meaning by combining Benjarong's pattern and Benjatath's colors. As illustrated in Figure 8.

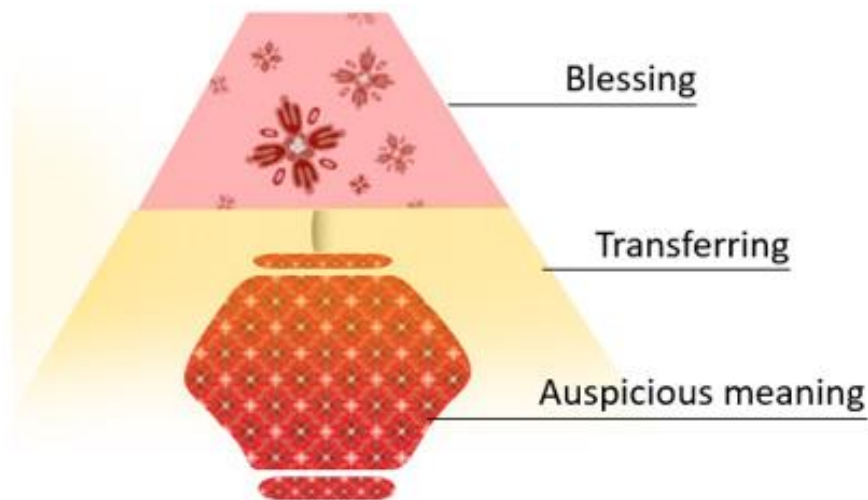


Fig. 8: The conceptual design is applied to the lamp's three primary components.
Source: Author

4.2 Prototype model

In this process, the study designed and developed the conceptual design into a series of five desk lamps instilled with the auspicious meaning by combining Benjarong's pattern and Bejatath's colors in a three-dimensional rendering instead of a prototype model. The result of this case study's metaphor products is presented in figure 9.



Fig. 9: The result of this case study's metaphor products
Source: Author

5. Metaphor product with new cultural meanings

The final metaphor product is represented by a series of five different colors of desk lamps. Figure 10 demonstrates, in accordance with the procedure described in the conceptual framework presented in Figure 3, that the metaphor product design of the case study is capable of reaching three different cultural levels.

On the outer level, the metaphor product characteristics (shape, light, and shadow) are derived from combining Benjarong's pattern and Benjatath's colors. On the middle level, the metaphor product use, function, and performance are developed to be festive gifts that will be blessed to each other, or souvenirs to commemorate the good things from one's experience on the journey or travel to other places and bring back to loved ones or themselves with the auspicious meaning embedded in these products. Therefore, at the inner level, the new meaning of the metaphor product is obtained from the conceptual design applied to the lamp's three main components. At its top, the lampshade reflects the metaphor of blessing through the scattering of flowers. The light emanating from the lamp represents the means through which the blessing is transmitted to the user. The vase-shaped lamp base portrays the auspicious meaning by combining Benjarong's pattern and Benjatath's colors.

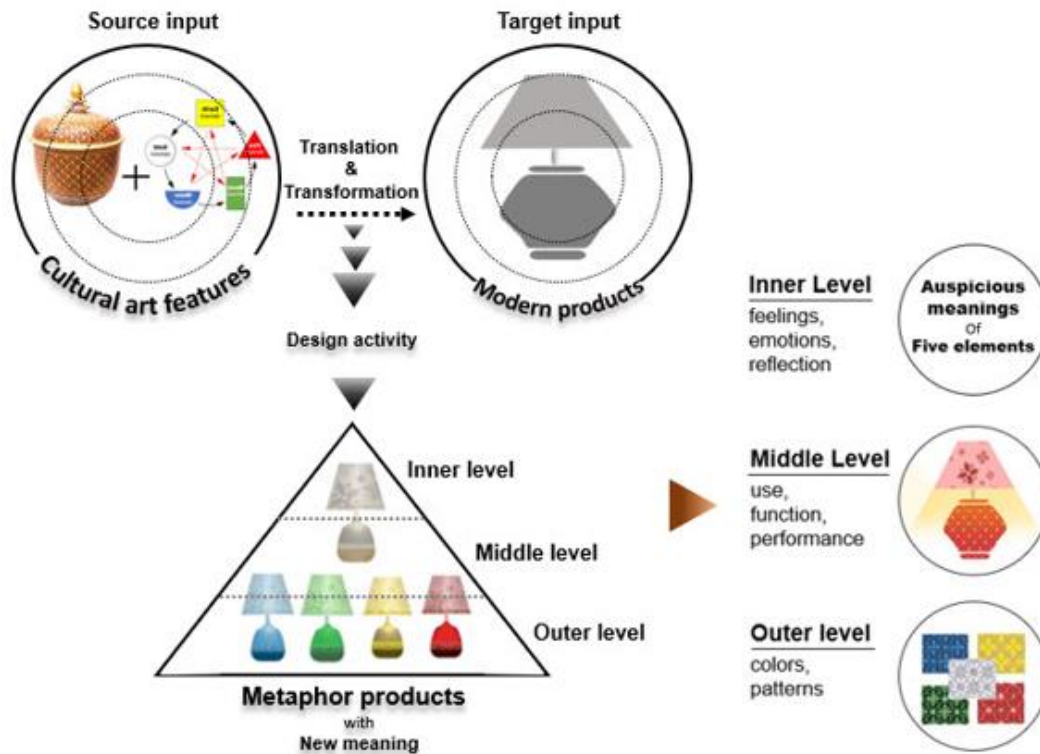


Figure 10: According to design process of the conceptual framework, the metaphor products can reach all three cultural levels.

Source: Author

Discussion

Numerous academic disciplines have conducted research on the use and interpretation of metaphor in creative endeavors such as teaching (De Knop & Perrez, 2014), ideological cartooning (Abdel-Raheem, 2021; Denisova, 2021), songs (Rossi, 2020), and visual arts (Fox, 2018). The ability of metaphor to deliver next to each other things that are utterly dissimilar from each other and to eventually open a new perspective by enabling people to understand and experience one type of example in the context of some other explains why that metaphor is deemed valuable and has become increasingly popular as a topic of interest in a broad range of fields (Lakoff & Johnson, 2013). To encourage users' cultural perspectives, the metaphorical product design approach has been taken into consideration. Therefore, the study develops a graphical framework of metaphorical design in order to provide guidance for metaphorically mapping and combining cultural art features into current products.

The case study employed in this study is intended to serve as an illustration of how the graphical metaphorical product design framework can be applied to achieve cultural product design objectives on all three levels of culture: outer level, middle level, and inner level. The inner level in particular is the most important cultural level to take into account while constructing metaphor products. Metaphorically cultural products have little to no significance or meaning if the inner level cannot be addressed. According to Hekkert and Cila (2015), the modern product must be more than just a mapping of source attributes to a target in order to qualify as a metaphor. A translation of meaning that affects the whole perception of a product must occur when using a metaphor. Without this instance, there is no metaphor; there is only juxtaposition. The functions and purposes of a sofa shaped like just a whale and a lavatory faucet shaped like a floral are unconnected to each other. Although they have a tangible map from source to destination, they lack any substantive mental connections. According to the principle of a metaphor product, the result is a metaphor product when both the source and the target input have indeed been mapped and combined with the source input meanings.

From the result of the case study, it is essential to engage in activities including translation, transformation, and design activities in order to have a chance of being successful in reaching all three cultural levels. This is a very important step that demands the examination and synthesis of cultural characteristics that are obtained from aspects of cultural art. On the outer level of the case study, the combination of Benjarong's pattern and Benjatath's five colors with the auspicious meaning of the five elements. On the middle level of the case study, the outcome is the function of the desk lamp with a lampshade patterned metaphorically mirrored as a floral blessing employing light as a medium. By combining Benjarong's pattern with Benjatath's five colors, the vase-shaped base delivers auspicious meanings. As a consequence, the case study discovers that the new meanings on the inner level emerged on both the outer and middle levels as tangible indications that inspire individuals to think comprehensively and, as a result, cause them to consider a metaphorical product meaning.

Conclusion

The utilization of metaphors to incorporate cultural art characteristics into new products can be seen as very helpful and valuable, both for the creative ideas that are employed in product design and for the people who interact with the products. But it should be evident that product designers don't have a simple, ready-made task to do. Instead, it is challenging to keep track of because there are a variety of factors at different levels of this incorporation, making it more complicated. Acknowledging and obtaining attributes from cultures, together with translating those values and integrating them into meaningful parts of product ideas, requires a deep understanding of many different fields, such as product design, traditions, cultural studies, anthropology, and information psychology, among others. Even though new meanings don't have physical value, most of them subconsciously change how people perceive things. Because of this, they have meanings that can't be seen but can be comprehended.

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