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Culture as Inspiration: A Metaphorical Framework for Designing Products with Traditional Cultural Properties (TCPs)

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Abstract: There is a lack of emerging methods for guiding designers in innovating cultural contents beyond superficial manifestations in the process of product design with the consideration of modern lifestyles. Grounded in metaphor theory from cognitive linguistics, this article proposes a theoretical model—as a diagrammatic tool for design practice—assisting designers and/or researchers in analyzing and integrating the elements derived from Traditional Cultural Properties (TCPs) into product functions meeting modern needs. A quasi-experiment was conducted to illustrate how this theoretical model was applied in two design cases, which aimed to blend the value of TCPs and modern lifestyles metaphorically. We argue that this theoretical model can assist designers and/or researchers in designing products, which can spur reflections on culture, enhance the user experience, and improve modern life with local identity through metaphorically blending of TCPs and modern lifestyles.

Keywords: cultural design; product metaphor; design method; cultural sustainability; sustainable design

1. Introduction

Cultural designs have attracted great attention in the last decade [1–3]. On the one hand, design artifacts communicating region-specific features can satisfy users' cultural needs [4,5]. On the other hand, driven by the forces of modernization and globalization, design practices carrying culturally significant elements, such as traditional crafts, have been pushed to the margins around the world [6]. Cultural change driven by overwhelming modernization should not cause the country to lose its historical links to its traditions. Herein, the concept of Traditional Cultural Properties (TCPs) has been widely accepted as a documented guideline to assess and protect any forms and objects rooted in a community's historical beliefs, customs, and practices [7].

Recently, the interplay between TCPs and modern lifestyles has been further investigated to increase the contemporary socioeconomic viability and human value of TCPs [4]. From this perspective, culturally significant design has been argued by design researchers and practitioners to construe that the qualities of TCPs can be innovatively transformed into modern products and services shaping people's lifestyles [8–10]. This implies the creation of something new by combining the elements derived from TCPs with modern sensitivities to satisfy people's psychological reflections of culture. When a user encounters a product with a specific cultural element, the reflective process of cultural learning is activated to construct an individual interpretation of culture in history and in current life. Scholars [5,11] reported that products carrying cultural elements could satisfy users' requirements in terms of meanings and emotions. This is consistent with Norman's [12] definition of reflective design: when there is cognitive communication between a user and a product.

However, more recent studies reveal that products with innovatively transformed elements derived from TCPs have a more profound impact on users' cultural reflections [4,5,13]. There is a lack of in-depth research and emerging methods for specially guiding designers in innovating cultural contents beyond superficial manifestations in the process of product design with the consideration of modern lifestyles.

To address the question mentioned above, we propose a new theoretical model of metaphorical design—as a diagrammatic tool for design practice—assisting designers and/or researchers in analyzing and integrating the elements derived from TCPs into product functions meeting modern needs. Through a metaphorically conceptual connection, products may evoke users' recognition and awareness of TCPs and contribute to culturally sustainable modernization that retains local identity. Our article is organized as follows:

- First, we review the current literature addressing cultural design methods and metaphorical design.
- Second, based on the literature review, metaphor theory [14] and cultural design models [13] are integrated into a new theoretical model addressing the relationships between elements derived from TCPs and product functions meeting modern lifestyles.
- Third, a quasi-experiment is presented to show how this proposed theoretical model was applied in assisting designers in designing products.
- Fourth, we argue this theoretical model can assist designers and/or researchers in designing products, which can spur reflections on culture, enhance the user experience, and improve modern life with local identity through metaphorically blending of TCPs and modern lifestyles.

2. Literature Review

2.1. Culturally Significant Design with TCPs

Cultural elements are always regarded as a crucial source for provoking artistic inspiration. Numerous designers and researchers have put effort into interpreting and transforming the physical forms derived from cultural traditions to modern artistic practices [15–17]. Recent design literature proposes that reinventing and encouraging a modern lifestyle with a unique local identity through strategic design expressions is significant for design practice [18,19]. It is believed that TCPs, as cultural capital and historical resources, could inspire and nourish contemporary design theory and support creativity in design practice [20]. Conversely, culturally significant design could support the sustainable role of TCPs in the contemporary cultural context and improve consumers' cultural satisfaction [5].

The initial idea of culturally significant design had a robust economic motivation rather than a simple utopian slogan. It can be traced to early research on the creative cultural industry and knowledge-based economy in the 1990s [21]. The cultural capital and resources of TCPs can be transformed into intellectual products to meet people's cultural needs concerning activities, such as fashion, films, and design and so on. Accordingly, this encouraged research that focused on strategic methods to apply and integrate cultural elements extracted from TCPs with modern products [22]. However, recent critical comments have shifted the attention of researchers and designers from the surface manifestations of TCPs to the visual dimension [2]. This challenges designers to move beyond visual stereotypes and further explore the deeper relationship between TCPs and modern lifestyles.

2.2. Analyzing TCPs by Cultural Model

Indeed, the interpretation of culture is complex and multi-disciplinary. The TCPs were elaborated into tangible and intangible categories referred to by UNESCO [23]. The tangible items refer to the physical objects built in history. The intangible items refer to historical knowledge-based practices, such as traditional dancing and singing. Design researchers and practitioners further specify that material category generally refers to tangible crafts, visual motifs, and behavior patterns, while the intangible category generally refers to the way of thinking, social customs, and so on [5,20]. These two categories

are highly interwoven. According to Ng's [1] study, for instance, Chinese Qipao's (cheongsam) evolving styles, as the iconic costume in the Chinese culture, mirror the growing emancipation of Chinese women.

Consistent with this view, Siu [13] further proposes an outer-intermediate-inner leveled structure, as shown in Figure 1. Corresponding to the tangible category, the outer layer is related to the material level, such as visual symbols and crafts, while the intermediate layer corresponds to behavioral activities to build a connection with the outer surface layer and the inner conceptual layer. Corresponding to the intangible category, the inner level works as the core value to stir cultural thinking and reflection. This outer-intermediate-inner leveled structure makes it easier for designers and researchers to analyze the leveled relationships between various elements derived from TCPs. Through deeply understanding specific elements of TCPs, a designer can use particular design methods and languages to express the culture belonging to each of the three levels (R. Lin, et al., 2007).

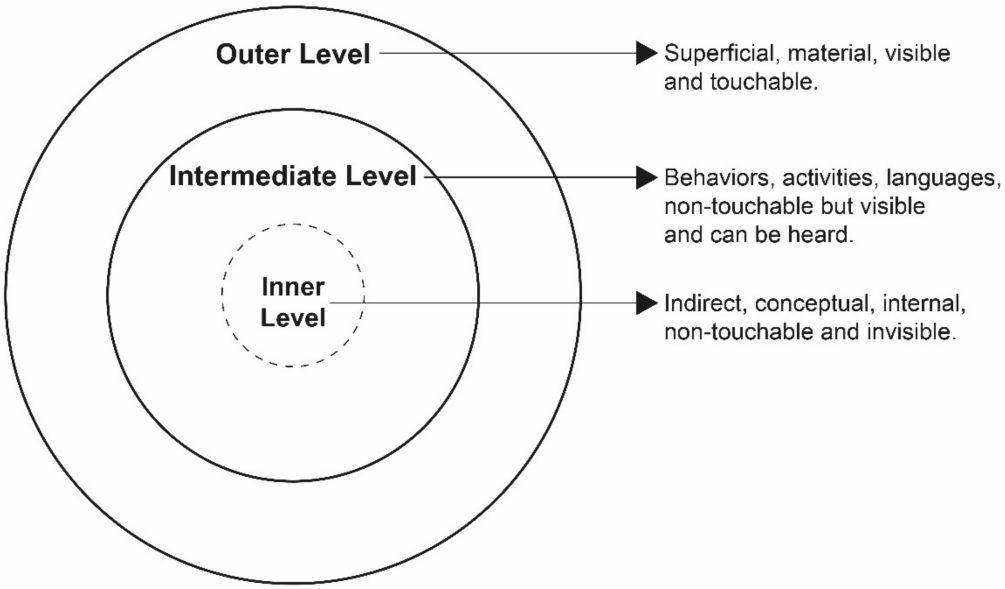


Figure 1. Siu's [13] outer-intermediate-inner leveled structure model of culture.

A lot of the existing research has also examined how to transform outer and intermediate levels of TCPs into modern design practice, such as visual motifs [5] and traditional handicrafts [24,25]. However, the design method related to the inner level of TCPs has seldom been investigated. Moreover, empirical studies have been conducted to compare users' satisfaction with the design solutions of different levels of TCPs, showing that inner level elements are more effective in enhancing users' cultural satisfaction. Siu also argued that design artifacts in the inner level of culture could inspire and shape people's behavior and ways of thinking in the changing modern context. Thus, it is necessary for designers and researchers to develop specific methods concerning the inner level elements of TCPs. Such inner level elements imply intangible and invisible knowledge/thinking rooted in TCPs, which could inspire users and encourage them to explore the cultural meaning behind products. For instance, baijiu (the national liquor of China, see details in Section 5.1) is not only valuable in its premium taste (intermediate level) but also significant in promoting a Chinese way of combining drinking with artistic creations (inner level).

2.3. Metaphorical Design

Lakoff and John [14] first elaborated on the underlying functions and structure by which metaphors assist people to learn, which they termed Conceptual Metaphor Theory (CMT). CMT has given rise to numerous studies exploring how multimodal expressions relate to cognitive origins [26]. People learn and experience something new in daily life by consciously or unconsciously mapping it metaphorically

to their previous knowledge. Consistent with this, much of our cultural understanding is also shaped through metaphorical techniques. Design artifacts, as conveyors of culture, embody cultural meaning, and stimulate users' perceptions through interaction processes, such as usage. Siu [27] examined how Hong Kong's culture is understood and reflected by the process of taking a local escalator. Therefore, the metaphorical design could be used as an effective means to make a design artifact culturally understandable and pleasurable. For example, the MUJI wall-mounted CD player design borrows the operation mechanism and form of a traditional ventilation fan found in typical Asian kitchens. Rather than providing a regular on/off switch, the design uses the power cord to control the CD player, similar to ventilation fans. Thus, every time a user operates it, his or her cultural memories of traditional ventilation fans will be triggered.

According to Fauconnier and Turner's model [28], metaphorical design involves a double-sided mapping process, wherein new insights and meanings emerge [29]. In this metaphorical model, when a conceptual projection occurs, two mental inputs (source and target in a metaphor or analogy) are built for partial mappings of counterparts between them, as indicated by solid lines in Figure 2. Partial projections from the two inputs, as indicated by dashed lines in Figure 2, generate blended meanings for developing inferences, arguments, ideas, and emotions, which can modify the initial inputs and change our views of the knowledge used to build those inputs. This is because, when people attempt to match what they know about the source with the target, certain aspects of each are revealed, others are deemphasized, new insights emerge, and deeper levels of meaning are tapped [30].

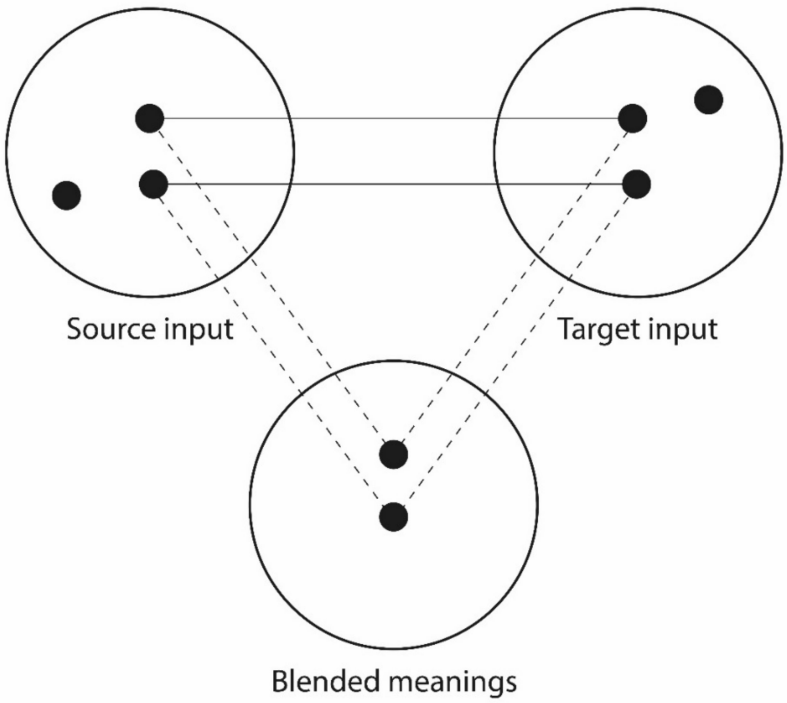


Figure 2. A typical conceptual blended diagram of metaphorical mappings [29].

Numerous studies have argued that metaphorical thinking is the fundamental device of human reason, a rhetorical flourish, and poetic imagination; the same holds for creative design [14,30]. For a long time, the metaphorical method has been discussed regarding the functions of creative design solutions based on CMT. It is generally accepted that a creative leap is the central feature of design thinking and imagination [31]. Cross [32] proposed that creative insights or concepts are not a sudden, unexpected shifts of perspective but rather an 'appropriate exploration.' For this reason, metaphorical design functions as the conceptual tools used by 'creative artists' to build innovative and appropriate connections that urge consumers and users to see things in a new light.

Understanding how to map TCPs and modern lifestyles metaphorically through embodied design artifacts requires in-depth investigation. As a crucial theory to assist creative and functional design, however, cultural aspects are seldom discussed from the perspective of the metaphorical design approach. We argue that products metaphorically connecting TCPs with modern lifestyles could encourage users to interpret the cultural meaning of TCPs in a new way, with consideration given to sustainable cultural development. In other words, products afford modern life needs and retain local cultural identity at the same time.

3. A theoretical Model of Metaphorical Design with TCPs

A new framework is proposed by adopting CMT [29] and the cultural model [13] to support cultural product design with TCPs. The metaphorical mapping works as a way for designers to combine modern lifestyles with cultural elements derived from TCPs to blend new cultural meanings. Siu's [13] cultural theory is adapted to emphasize the crucial layered mapping of intangible and tangible aspects between TCPs and modern lifestyles. When a user encounters a product, its outer appearance and form are perceived, including intermediate-level behavioral actions. These two levels work as a physical experience to trigger the metaphorical connection [33]. When the source element of TCPs and the target element of modern lifestyles are mapped onto each other, the new cultural meaning is stimulated. This argument is based on empirical evidence from Chow et al. [34] that new meanings were blended after user identifying target and source domains in a phone interface design. Joy et al. [35] also empirically investigated that consumers generated new meanings when perceiving target and source in visual advertisements. Through constructing mental imagery, metaphors are interpreted, and new meanings are emerged [36,37]. Figure 3 shows the conceptual integration of TCPs and modern lifestyles.

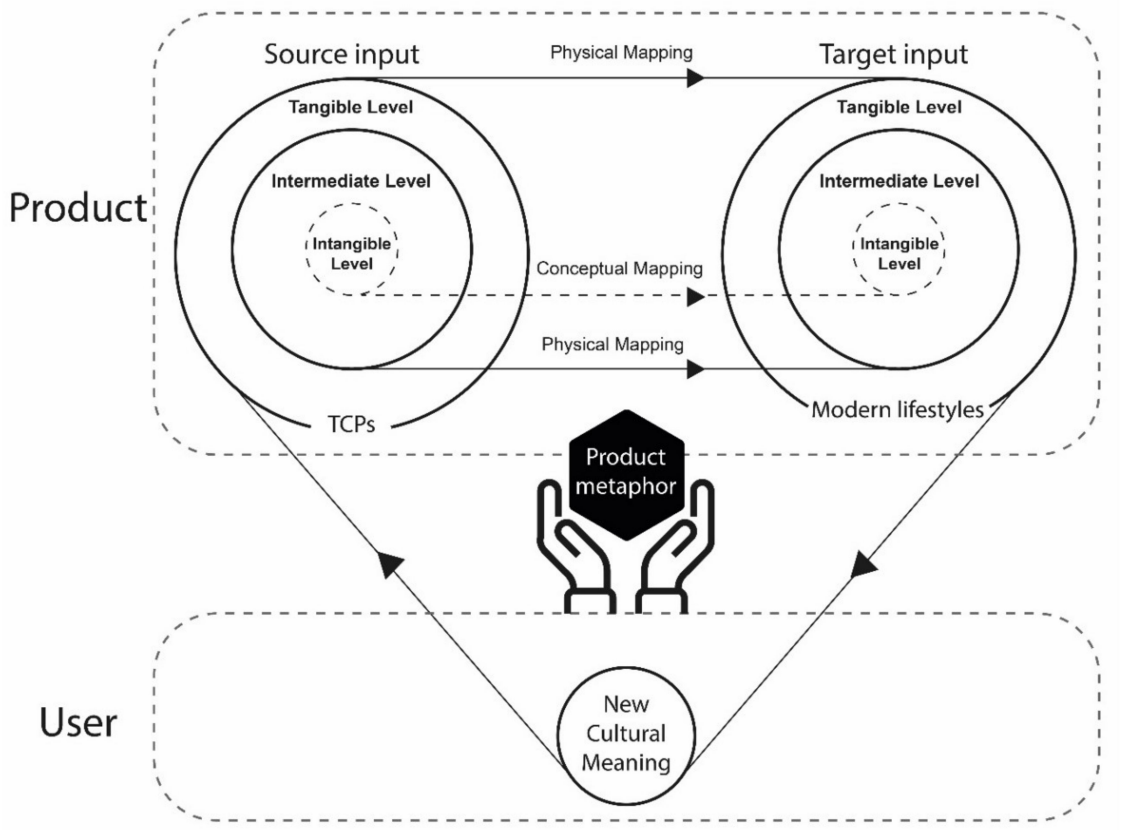


Figure 3. A conceptual framework for designing metaphorical mappings between TCPs and modern lifestyles.

3.1. TCPs as the Source Domain

Conventionally, conceptual metaphors underline the familiarity of the source domain to improve the transparency and comprehensibility [26]. For instance, people may try to understand an unfamiliar functionality of the product through mapping it to a familiar item from their everyday experience. The familiarity of the source domain can ease the learning process of the target domain. Besides, the comprehensibility toward the new knowledge relies on the similarity between these two domains. It contributes to the success of a metaphorical mapping from the user side [38].

Forcevile [39] states that design artifacts are physical objects allowing both the source and target domains to cohabitate homospatialily, which is different from the verbal metaphors. The hybrids increase the transparency of both the target and source domain at the same time through physical features, for example, the visible forms, shapes, and colors (i.e., tangible and intermediate level elements). Given this, though TCPs are relatively remote knowledge to modern people, the comprehensibility of TCPs can be stimulated by the design hybrids of physical mappings between TCPs and modern lifestyles. Such mappings are based on the conceptual connections in the intangible level.

3.2. Modern Lifestyles as the Target Domain

Design practices are focused on the development and facilitation of contemporary lifestyles. A designed artifact with newly developed traits for modern lifestyles can be regarded as a target domain aimed at user comprehension and adoption. When incorporating TCPs—as source elements —into modern product traits, users are triggered to reflect on and generate new insights regarding their lives. Similar to TCPs, modern lifestyles can be divided into a three-layered model representing the physical and conceptual aspects rooted in modern life.

3.3. New Cultural Meanings

Metaphorical designs have long been the focus of research attention for many reasons. Among these, the metaphorical interpretation, as new insights, stimulated by designed artefacts has been regarded as one of the most valuable outcomes. Ref. [40] suggested that the fundamental reason for applying metaphors is to map two distinctive, previously unrelated thoughts to a new hybrid idea or concept. Further, the metaphorical idea is supported by meaningful associations from individual experience, since people's comprehensive mappings of conceptual metaphors are grounded in the embodied experience, which refers to psychical actions and practices [41]. Given this, we propose that the conceptual mapping between intangible-level TCPs and modern lifestyles comes from the physical mappings related to the tangible and intermediate levels. Such layered mappings connecting both physical and conceptual layers stimulate users to imagine and interpret new cultural meanings through concrete life experiences and perceptions.

4. Method

To illustrate the application of the proposed metaphorical framework, a quasi-experiment was conducted, which is considered an appropriate approach in design literature addressing design methods and techniques [42]. This study was designed to illustrate the proposed theoretical model, as an intervention, in the design process.

4.1. Sample

Participants consisted of 20 students from the Master of Design Strategies program class called "Chinese Traditions and the 21st Century" in the School of Design, The Hong Kong Polytechnic University, from May to July 2019. The average age of participants was 36.5 years, and 60% were female. All participants acquired a minimum of two years of professional experience in a design-related field before admission.

4.2. Procedure

During the class, the first author, as one of the subject instructors, taught metaphor theories (without introducing the new theoretical model) through a 1.5-h lecture. In addition to the instructors, nine experts in the field of Chinese art and culture were invited to give a 1.5-h lecture respectively covering Chinese architecture, ink arts, and crafts (see Table 1). After that, participants were asked to form five groups by themselves. Each group consisted of four members to complete a subject assignment of designing a product with the knowledge of Chinese culture learned from this subject. For over a month, two of the five groups were comfortable to apply metaphors to their designs and were tutored by the first author under the new theoretical model, which aimed to blend TCPs and modern lifestyles for cultural reflections through product usage.

Table 1. An inventory of lectures in this class.

	Lecture Topic
1	Hybridity: Is it East or West?
2	Chinese Craft Tradition& Its Contemporary Challenges
3	Chinese Landscape Painting and Aesthetic
4	Reproducing Elite Art: Calligraphic Rubbing Collections in Late Imperial China
5	(Re-)Interpretations of Traditions: Xu Bing & Ai Weiwei
6	The Hybrid Architecture of Lingnan
7	The Qing Pictures of Tilling and Weaving: Replicating Processes by Design
8	Cross-Cultural Exchange and Social Identity in Twentieth-century China
9	Maritime Material Culture in Chinese Art and Craftsmanship

Note: Each lecture lasted 1.5-h.

4.3. Assessment

Two reviewers with seven and eleven research experience respectively in design major, blind to the aim of this study, evaluated the submitted designs created by participants. The criteria were centered on two factors argued in this study: namely, spurring reflections on culture and enhancing the user experience. Reviewers evaluated each criterion by rating two items on a seven-point scale. For instance, reflection on culture and user experience were measured by two bipolar semantic items (meaningless vs. meaningful, and pleasing vs. annoying) that were adapted from Osgood et al., [43,44] measurements.

5. Results

Participants yielded five product designs covering different Chinese cultural elements. The responses from the two reviewers were as listed in Table 2. Results showed that the two designs tutored under the new theoretical model gained relatively higher scores on spurring cultural reflections and satisfying user experience. The two tutored designs are illustrated in detail in the following parts.

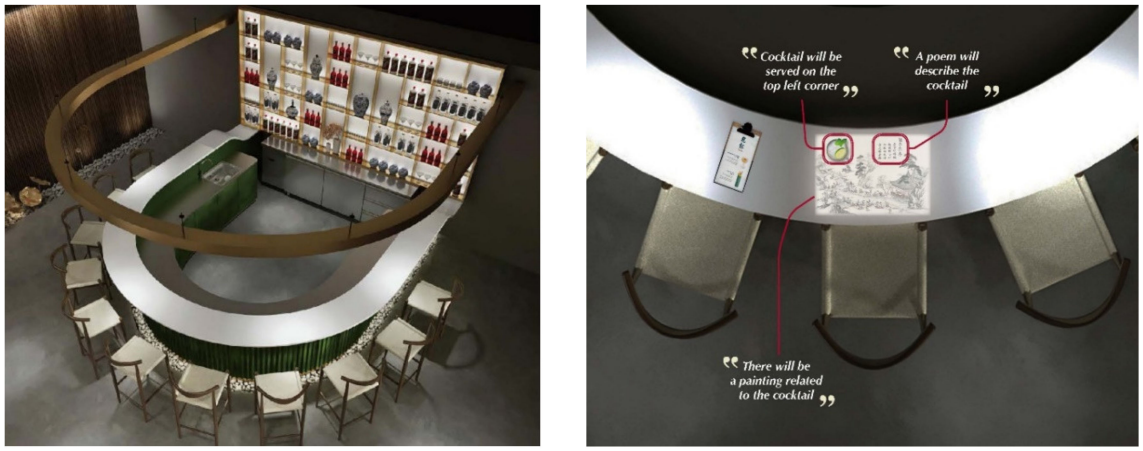
Table 2. Two reviewers' evaluations of submitted designs in this class.

Group	**T**	**Cultural Elements Involved**	**M (CR)**	**M (UE)**
1	+	Baijiu	6	6.5
2	−	Chinese characters	4	5.5
3	−	Herbal treatments	3	4
4	+	24 Solar terms	5.5	6
5	−	Chinese traditional make-ups	3.5	4

Note: M (SR) denotes the mean of cultural reflections, M (UE) denotes the mean of user experience. T means treatment ("+" denotes the group was treatment group while "−" denotes the control group).

5.1. Gānbēi Cocktail Bar Table

One cocktail bar table prototype called Gānbēi is illustrated (see Figure 4), which was designed by Group 1 (students: Ip Ka Yan Joyce, Jin Sukjin, To Chun Hung Tony, and Young Ka Wai Clara). This design gained relatively higher scores in spurring cultural reflections (mean of cultural reflection: 6) and enhancing user experience (mean of user experience: 6.5).



(**a**) (**b**)

Figure 4. Gānbēi cocktail bar table. (**a**) The U-shaped bar table and seat positions take inspiration from the traditional drinking game called Qu Shui Liu Shang in Chinese history, wherein a cup of baijiu is floated down a stream with people seated on both sides; (**b**) The cocktail will be served on the top left corner, with a graphic display of the poem and a painting describing the game of Qu Shui Liu Shang.

5.1.1. The Metaphorical Mappings

Baijiu (white liquor), otherwise known as the national liquor of China, is a well-known distilled spirit that has been manufactured for over 2000 years [45]. It is believed that baijiu originated in China and possesses a unique position in Chinese culture [46]. Following the guidelines of TCPs, several items derived from the consumption of baijiu were filed as intangible cultural heritages embodying the rich symbolic, behavioral, and spiritual value rooted in Chinese history. For instance, the traditional brewing skills of baijiu, such as the classic brand Maotai, were listed as China's first group of intangible cultural heritage [47].

Chinese people enjoyed the consumption of baijiu for satisfying both physical and spiritual needs. In addition to its premium taste, baijiu could induce artists' creativity and helps build social relationships. Chinese artists, such as the most celebrated poet and drinker Libai, liked to drink baijiu because the state of drunkenness induced "a perfect, untrammeled receptivity to divine inspiration," consequently developing many drinking habits in Chinese history [48]. Among those, the traditional game of drinking baijiu called Qu Shui Liu Shang was played during the Spring Purification Festival, in which a cup of baijiu is floated down a stream with people seated on both sides. During the game, the first person sitting in front of the cup when it stops must drink and compose an artwork, such as a poem. The calligraphy piece Lanting Xu, as the most famous work scribed by Wang Xizhi in Chinese history, described this traditional drinking game [49]. It depicted a gathering of 42 scholars to compose poems and to drink baijiu at Lanting. The scholars played the traditional game of Qu Shui Liu Shang along a river, as shown in the picture (Figure 5): Cups of baijiu drift downstream; whenever the cups stopped at someone, they had to compose a poem or finish the baijiu [50]. This drinking game reflects the Taoist thinking that the natural environment is the origin of artistic creations; namely the philosophy of the unity of man and the universe [51].

Figure 5. Meandering Stream at Lan-ting, Yamamoto Jakurin, Hanging scroll color on silk, 1790, Kobe City Museum.

The project of Gānbēi metaphorically blended the traditional Chinese game of drinking baijiu with the modern lifestyle activity of drinking cocktails. The name Gānbēi means 'toasting' in Chinese and is the equivalent to cheers in English. The design concept of the Gānbēi bar table is targeted at young and fashionable customers interested in cocktail drinking. The materials of bamboo green, wood veneer, stone decoration created a touch of nature—the whole visual elicits the experiences of Qu Shui Liu Shang from Lanting Xu in a contemporary cocktail style.

Consistent with the proposed framework (see Figure 6), at the tangible level, a U-shaped form with graphics of poems and paintings and other natural materials—as visual symbols reminding the Qu Shui Liu Shang game—are physically mapped onto the modern-looking bar table. At the intermediate level, drinking baijiu in the game of Qu Shui Liu Shang maps onto the modern behavior of drinking cocktails at the bar by sharing the same social function of gathering. It is construed that alcohol facilitates relaxation and social success [52]. The inner intangible level mapping is based on the conceptual relationship between the drinking game of Qu Shui Liu Shang and cocktail drinking as part of modern nightlife. Such a metaphorical design encourages the emerging understanding of drinking as a way of relaxing to connect the environment, people, and art.

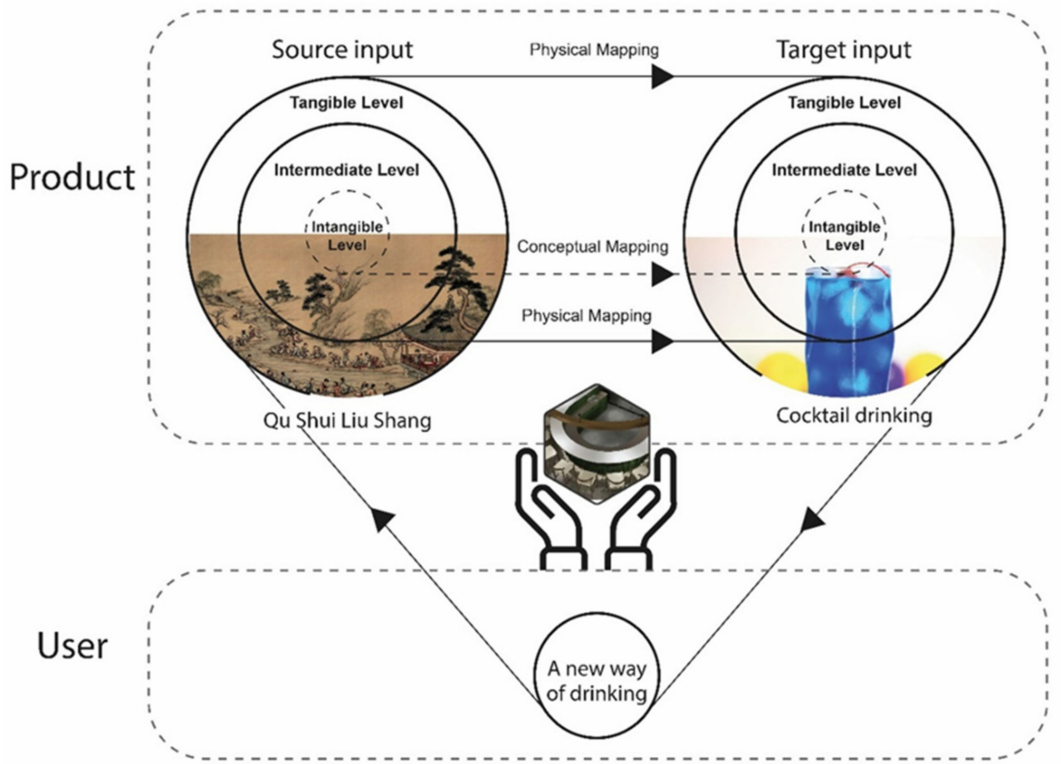


Figure 6. The metaphorical mappings of baijiu game Qu Shui Liu Shang and cocktail drinking.

5.1.2. The Metaphorical Interpretations of a New Drinking Lifestyle

Though baijiu is still popularly served in formal banquets and business dinners today as a symbol of showing respect and Chinese tradition [53], it is hardly seen at modern night spaces such as bars and clubs. It has been reported that the night-time economy generates billions of yuan in revenue in urban China [54]. The original value on artistic and social behaviors is disconnected from the Chinese modern drinking lifestyle, which is largely inspired by western culture.

The metaphorical design of Gānbēi provokes users to learn the cultural value behind drinking baijiu in the modern context of nightlife. Through the metaphorical blending, the social enjoyment induced by modern cocktail drinking is enriched by introducing the untrammeled experience of Qu Shui Liu Shang. Drinking a cocktail at a night bar maps on the scene in which ancient Chinese artists enjoyed themselves in nature to get inspired and relax spiritually. In other words, this conceptual mapping helps a drinker to project him/herself onto an ancient Chinese artist enjoying the state of drunkenness for divine inspiration from nature. Consequently, drinking is not only for a way of relaxing socially but also for an aesthetic savoring of culture.

5.2. The Purification of 24 Solar Terms Bathing

The *Purification of 24 Solar Terms Bathing*, a soap prototype was designed by Group 4 (students: Yue Ho Cheung Daniel, Leung Lai Ling Kobe, Lam Pui Chu Kammy, Ng Yiu Fai Jason. This design seeks to reinforce cultural awareness of 24 Chinese solar terms in daily bathing metaphorically, thus mapping 24 solar terms and the modern bathing lifestyle (see Figure 7). It gained relatively higher scores in spurring cultural reflections (mean of cultural reflection: 5.5) and enhancing user experience (mean of user experience: 6).

Figure 7. A soap prototype called the *Purification of 24 Solar Terms Bathing*.

5.2.1. The Metaphorical Mappings

The 24 solar terms, as a typical intangible cultural form representing Chinese thinking, are a system developed based on observation of the sun's movement, phenology, and seasonal changes that guide agricultural affairs and farming activities. The 24 solar terms played important roles and benefited living in ancient and even contemporary China. According to literature [55], this system widely inspired Chinese seasonal-based cuisine for health treatment, which is followed in many other parts in Asia, including Japan and Korea. For instance, during li qiu (start of autumn), the 13th solar term of the year, Chinese people eat steamed eggplant, which aims to detoxify the body and cool down the body according to the traditional Chinese medicine. The 24 solar terms have been added to the UNESCO Intangible Culture Heritage list and are widely considered as China's 'fifth great invention' [56]. However, they have gradually become invisible in modern lifestyles.

The practice of bathing embodies the purification of mind and the power of life in Chinese culture. In Taoism, bathing can purify the body and refresh the mind, which is regarded as a type of therapy. Today, Chinese people still practice bathing in public bathhouses as a cultural activity. Bathing signifies the spirit of a healthy life and implies physical and mental pleasure in modern life.

The 24 Chinese solar terms and bathing culture are metaphorically blended into the soap design (see Figure 8). Concerning the nature and mechanism of the 24 solar terms, 24 flowers by seasonal wind, which is a sub-concept of the 24 solar terms, are utilized as a visually physical source domain. This refers to specific flowers blooming at a specific time throughout the year. For instance, the Cherry Blossom indicates Spring Commencement. Each flower represents a specific solar term. In this way, 24 distinctive soaps with specific solar term flowers are constructed, which metaphorically provide a signal about seasonal changes with the consideration of health. The package design reflects the same product metaphor. Consistent with the proposed framework, the physical mappings cover the outer and intermediate levels. At the outer level, 24 flowers by seasonal wind, touchable visually and olfactorily, maps onto the pleasant smells and visual environment of bathing. At the intermediate level, 24 flowers by seasonal wind embody an instruction for daily life through dividing time, which is related to the functions and activities of bathing. The inner level mapping is based on the conceptual relationship between 24 solar terms and bathing; namely, the time balance and power of life. Such a metaphorical design encourages the understanding of timing as a way of bathing.

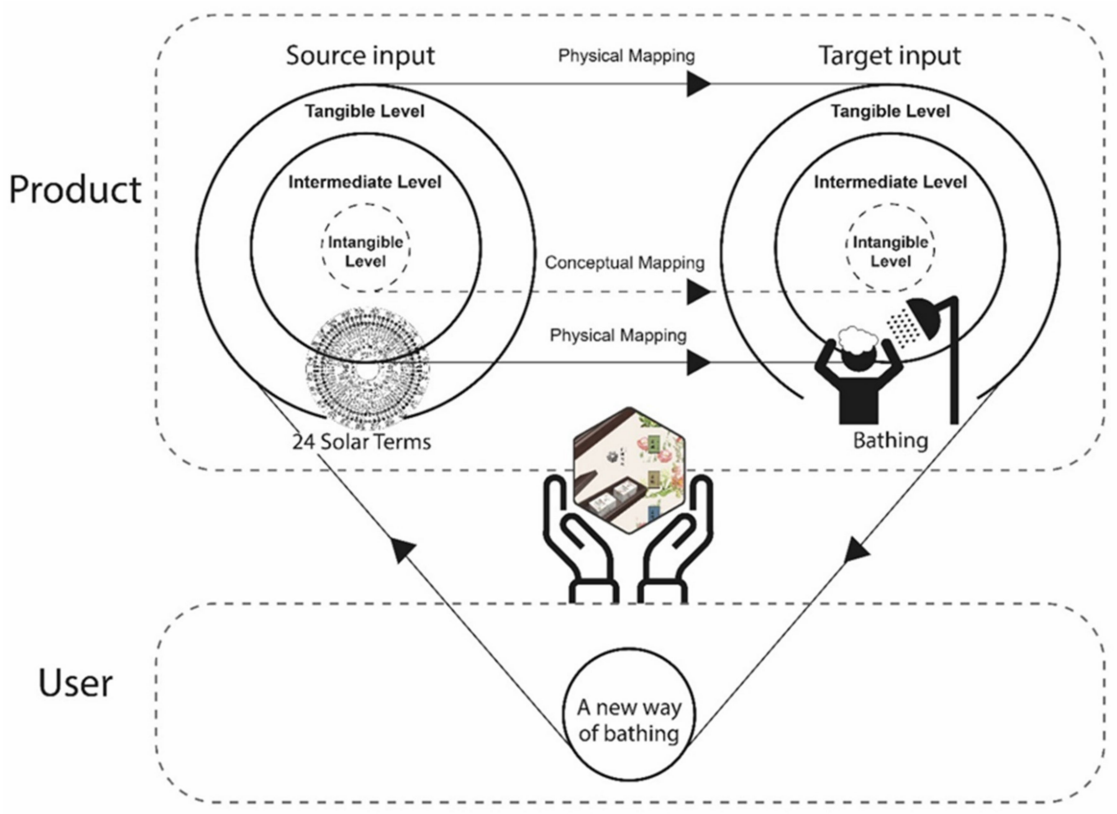


Figure 8. The metaphorical mappings of 24 Solar Terms and bathing.

5.2.2. The Metaphorical Interpretations of a New Bathing Lifestyle

On the one hand, the metaphorical design of the 24 Solar Terms soap spurs users' cultural memory associated with bathing, helping to sustain bathing as a cultural practice in the modern context. Bathing, as a daily behavior with cultural identity, is full of national history and hygiene knowledge, which is often neglected due to the hectic modern life. Such a design concept is distinctive in competing against itself with homogeneous soaps by visually communicating the cultural symbols of 24 flowers by seasonal wind. For modern users, although the knowledge behind the 24 solar terms is relatively unfamiliar, the visual expression of 24 flowers by seasonal wind is grounded in their physical body experience to remind their cultural memory of seasonal herbs. Eastern cultures, especially the Chinese culture, are famous for their practice of herbal therapy. In this design case, through outer- and intermediate-level physical mappings, the modern bathing activity is conceptually perceived and endowed with a distinctive cultural identity in the global context. In other words, the cultural value of the 24 solar terms is sustained as a part of modern lifestyles.

On the other hand, the metaphorical meanings behind 24 Solar Terms soap contribute to improving hygiene practices in a modern context by integrating with it the health knowledge of traditional herbal bathing. The modern discourse on hygiene regards bathing as a necessary clinical act of body cleansing. Moreover, people tend to take showers instead of engaging in the 'luxury' of bathing due to the limited living space resulting from urbanization. The metaphor of human bathing as a flower blooming directed by a timeframe reminds modern users of the importance of engaging in their hygiene practices (bathing) at a balanced pace. This soap case, based on the concept of seasonal flower bathing therapy, integrates the meanings of traditional phenology into modern bathing, which spurs a cognitive learning process through physical usage.

6. Discussion and Conclusions

This article introduces a framework of metaphorical design with TCPs for designers and researchers to enhance cultural reflection in users, aiming to improve modern lifestyles in terms of cultural satisfaction. Although there have been many prior attempts to reinvent the cultural significance of TCPs in design practice, the metaphorical design approach has seldom been discussed as a way to promote users' interpretations of cultural meanings. Thus, our conceptual framework, as a theoretical model, provides a diagrammatic tool for blending the value of TCPs and modern lifestyles metaphorically, which contributes to activating a reflective process regarding the relationship between culture in history and modern life. To specify, the elements derived from a specific TCP can be analyzed through a layered tangible-intermediate-intangible model, which generates a metaphorical connection to a specific modern lifestyle. Such a process connects physical function and meaningful cognition to lead to an experiential quality of cultural learning. Through analyzing two design cases, this article proposes that the metaphorical blending of TCPs and modern lifestyles can spur reflections on culture, enhance the user experience, and improve modern life with local identity.

Modern lifestyle has received limited attention in previous studies into cultural products and TCPs. Scholars [1,4,13] argue that product design could work as a conveyor of culture and shape users' thinking in the changing modern context. However, few studies construe the detailed connection between TCPs and modern lifestyles. This study argues that designers can deliberately apply the elements derived from TCPs with metaphorical connections to modern lifestyles in order to elicit emerging reflections in product usage. This approach can enrich both the cultural product design and sustainability of TCPs in the modern context. Though cultural elements derived from TCPs are relatively unfamiliar for modern users, especially for foreigners, the design method revealed in this article encourages a learning process. In short, the tangible and intermediate level elements, as physical hints, attract users' cognitive attention to learn and, consequently, elicit a metaphorical interpretation.

Our proposed framework is motivated by the theoretical exploration of an analytical tool for designers and researchers to scrutinize the detailed relationship between TCPs and modern lifestyles. To specify, designers and researchers need an analytical tool to scrutinize the mechanism of elements, their resulting meanings, and conceptual integration. Previous scholars mainly focus on an overall process, ranging from element extraction to designers' transformation [22], or the designer-user-product relationship [2].

Though both metaphor and cultural design are prevalently discussed in design literature, few studies have attempted to investigate their theoretical connections for guiding design practice. From this perspective, our leveled metaphorical model combines the blending model [28] and cultural theory [13]. Specifically, a metaphorical design combing TCPs and modern lifestyles can be analyzed by dividing the mappings into physical and conceptual. The physical mappings cover the outer (e.g., superficial symbols) and intermediate levels (e.g., activities and behaviors). The conceptual mapping connects the intangible meanings of TCPs and modern lifestyles. This interlinked and leveled framework helps designers better understand profound cultural relationships when applying TCPs as source elements in design practices.

7. Limitations

There are certain limitations in the current approach. First, the empirical effectiveness of this proposed framework is unknown. A future experiment is promising to examine designers' benefits or challenges when applying this method. Especially, the effect of designers' expertise level (e.g., novice or expert) could be taken into considerations. Previous scholars [57] reported that the expertise level of a designer worked as a significant factor in impacting design outcomes of product metaphors. Second, Future studies should include an empirical evaluation to examine users' feedback on the artifacts designed under this proposed framework. Third, it would be more culturally significant to apply this framework to various cultures, such as cultures of Japan and even western countries. Future studies might consider comparing the effectiveness of this framework when applied to various cultures.

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