Designing Gardenia-Inspired Cultural Products

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Abstract. Recently, Taiwan's community development has shifted toward emphasizing local cultural characteristics, where local handicrafts and agricultural products have been the primary drivers of the development of local specialty industries. From 1920s to 1940s, many residents of the Fuzhou area of Banqiao in what is now New Taipei City relied on the fragrant flower industry (i.e., growing gardenia, *Gardenia jasminoides*) as their primary source of income. This study used gardenia as a basis to transfer local culture into cultural codes before designing a series of gardenia-inspired cultural products. Finally, this study performed questionnaire analysis to determine perceptions of the cultural products; the results may serve as a reference for future design studies.

Keywords: Local culture · Fuzhou area · Gardenia · Cultural products · Cultural codes

1 Introduction

Taiwan has undergone substantial community development in the past half century. In 1968, it promulgated the Regulations on Community Development Work. In 1994, the Council for Cultural Affairs (now Ministry of Culture) introduced the concept of comprehensive community development. In 2002, the Executive Yuan introduced the Challenge 2008: National Development Plan, which was later developed into the New Hometown Community Building Project. Similarly, Taiwan launched the Taiwan Cultural Life Brand Internationalization Project, in which local cultural elements were utilized for industrial development, produce value enhancement, and brand internationalization. These endeavors have enabled nonprofit organizations in Taiwan's cultural and creative industry to prosper while developing into local specialty industries that feature unique products such as handicrafts and agricultural products. In 1989, industries and products with local characteristics were selected from the 319 townships in Taiwan for the One Town One Product project, aiming to enhance the value of such products through branding and creative marketing, transforming local characteristics to knowledge economy-based cultural and creative industries.

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1.1 Study Motivation

From the 1920s to 1940s, many residents of the Fuzhou area of Banqiao in what is now New Taipei City grew gardenia (*Gardenia jasminoides*) as their primary source of income. Sales of gardenias dominated the scented tea market in China and even spread to Southeast Asia. However, the decline of the fragrant flower economy caused gardenia farming to slowly disappear in Fuzhou; this decline combined with the increasing number of small-scale processing plants that changed the focus of local industry and rendered gardenias mostly irrelevant to local people's lives. This study browsed ancient literature for gardenia- and *zhi*-related (*zhi* is an ancient drinking vessel used for ceremonial purposes and namesake of the gardenia) historical records to determine the possibility for *zhi* and gardenia to transfer, transit, and transform cultural codes, on the basis of which cultural and creative products are developed. The objective was to help industrialize the local culture of Fuzhou and combine the knowledge economy with culture, art, aesthetics, and creation-oriented cultural and creative industries to meet diversified global consumer demands to drive the area's economic growth.

1.2 Research Objectives

1. Use two orders of signification, a core theory proposed by Barthes for applying semiotics to cultural studies as the design methodology to develop a procedure for transforming the cultural code gardenia into cultural and creative products.
2. Obtain the semic codes of Fuzhou's local cultural characteristics and gardenia, analyze the denotations of connotations of these codes to decipher their meanings, translate the meanings into design elements to be applied in cultural product designs, and implement deductive reasoning using experimental design projects as references for subsequent design creations.
3. Utilize local cultural assets in product designs to preserve characteristics of local culture, promote local industry transformation, and facilitate cultural industrialization as well as industrial culturalization.

1.3 Research Methods

This study conducted document analysis and used grounded theory, case analysis, and semiotic methods to interpret and analyze data. A quantitative research method was adopted for case verification.

Qualitative Research

This study used the semiotic analysis framework proposed by Fiske and Hartley (1978) as an extension of Barthes' theories on signs. The framework integrates and distinguishes three levels of meanings, denotation (the first level), connotation and myth (the second level), and symbol (the third level). Denotation comprises signifier and signified, and connotation and myth illustrate the broad principles of culture used to organize and explain phenomena. This framework was used to establish a mechanism for transferring the cultural code gardenia as well as a system for related cultural product design.

Quantitative Research

This study referenced transfer, transit, and transform, the three levels of cultural creative product transform (Lin), and adopted instinctive design, behavioral design, and reflective design, the three dimensions of such a transfer process, to design a questionnaire, which was then used to investigate the designs of gardenia-inspired cultural products. The questionnaire design solicited perceptions regarding three aspects—appearance, function, and emotion—and viewer and consumer perceptions were identified from survey results to design related cultural products. The questionnaire design is shown in Table 1.

Table 1. Questionnaire design for gardenia-inspired cultural products

Dimension	Operational aspect	Question
External level	Perceptions of appearance	Q1. Does this product appropriately use the appearance of the gardenia to form its overall appearance? Q2. Does this product appropriately use the appearance of *zhi* to form its overall appearance? Q3. Does this product appropriately use the decorative elements of *zhi* to form its overall appearance?
Behavioral level	Perceptions of function	Q4. Does this product look beautiful and unpretentious? Q5. Is this product convenient to use? Q6. Do the functions of this product meet the needs of modern people?
Psychological level	Perceptions of emotions	Q7. Does this product show the fun of history? Q8. Can this product display cultural meanings? Q9. Does this product touch you emotionally?
Assessment level	Overall perceptions	Q10. Do you find this product creative and ingenious? Q11. Are you fond of this product?

This study conducted a quantitative questionnaire survey and analyzed participant data using the SPSS 20 software package and descriptive statistical methods. The analysis of reliability in this study calculated internal consistency reliability by using Cronbach's coefficient. According to Sapp (2002), reliabilities of .80–.90 for standardized tests may be acceptable. The alpha values of .934, .954, and .950 reflected excellent reliability in the whole scale for each of three products. Subsequently, this study performed factor analysis to determine the factors influencing aspects of each scale.

1.4 Research Framework

The design process was divided into five steps according to the design transfer model proposed by Lin (2014). The process is as follows: (1) analyze cultural characteristics, (2) link to product context, (3) select suitable concepts, (4) design and develop, and

(5) decide the final products to be produced. The three levels of design transform namely transfer, transit, and transform, are used to help designers design cultural products. Figures 1 and 2 show the three design models and levels of gardenia-inspired cultural products, respectively.

Fig. 1. Design model of gardenia-inspired cultural products

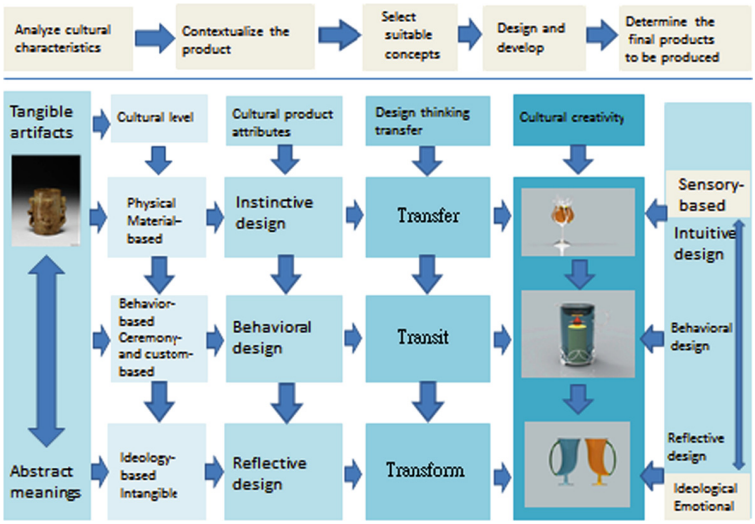


Fig. 2. Three-level design level of gardenia-inspired cultural products

2 Related Theories and Literature Review

2.1 Ancient Books and Literature

Naming of the Gardenia

The gardenia was named after the *zhi* (卮) by ancient people because its fruits resembled a small wine glass. Gardenia fruits can be used to produce natural yellow dye that can be used for coloring food or clothing. Gardenia was a precious cash crop during the Han dynasty, and gardenia flowers were used to make scented tea or eaten as food because of their strong aroma. Royal families and nobility in the Han dynasty used jade *zhi* as ritual vessels in grand ceremonies. The use, appearance, and history of *zhi* are presented in Table 2.

Table 2. Appearance and use of *zhi*

Zhi	Material	Silver, copper, jade, stone, lacquer, ceramic	
	Shape	Capped, cylindrical, featuring straight walls, deep "bellies," flat "bottoms," "ears," and three "feet"	
	Embossed ornaments	Animal	Patterns of vermilion birds, dragons, *chi* ornamental hornless dragons), phoenixes, or bears
		Plant	Patterns of grasses, peaches and persimmons
		Other	Patterns of clouds, fairies on clouds, and geometric shapes
	Use	Ritual and birthday celebration vessels used by royal families and nobility at grand ceremonies during the Han dynasty	

Origin of Yellow as the Color of Emperors

In ancient Chinese culture, yellow was a symbol of nobility and power, and the color was used for emperors' dragon robes. After the Tang dynasty, yellow was the favorite color of emperors. Emperor Gaozu of the Tang dynasty issued a decree banning common people from wearing yellow clothing, and Emperor Gaozong of the same dynasty amended the decree, banning everyone except the emperor from wearing yellow. During the Five Dynasties and Ten Kingdoms period, Northern Han and Khitan people invaded the south, and Zhao Kuangyin led a northern military expedition to pacify the rebels. In 960, when a mutiny occurred at Chenqiao Town, soldiers wore yellow robes and cheered for Zhao to become the emperor. After his return to Bianjing, Zhao ascended the throne, founding the Northern Song dynasty. Yellow robes thus officially became a symbol of imperial power. Emperor Renzong of Song issued a decree banning common people from wearing yellow robes or robes with yellow patterns, making yellow robes and the color yellow exclusive to the emperor.

2.2 Culture, Signs, and Cultural Codes and Products

Signs

From a semiotics perspective (as opposed to a positivism perspective), all cultural phenomena in the world can be viewed as sign systems. All forms of expression (e.g., languages, words, and culture) can be viewed as combinations of signs, and the meanings of these signs are based on cultural conventions and relationships (Fiske 1997). Barthes divided sign meaning into two levels; in addition to the first level of meaning, or denotation, the second level of meaning can be generated in the forms of connotation, myth, and symbol. All three forms exhibit the interaction between sign-generated meaning and social culture. Connotations are derived from traditions or culture and illustrate how signs interact with users' feelings, emotions, and cultural values (Fiske 1990). Barthes (1972) separated denotation from connotation, explaining that denotation refers to the apparent meaning of a sign, and connotation refers to the meanings given by social culture. When signs carry cultural value, their connotations can explain how their interpreters' perceptions, emotions, or cultural values influence the way they interpret the signs. Specifically, myth is a major principle for a certain culture to interact with and interpret external reality; that is, it is a culture-specific way of thinking.

Culture

Geertz introduced culture from a semiotics perspective, indicating that culture comprises meanings (presented in the form of signs) that have survived the course of history and is based on human exchanges and the preservation and development of knowledge about and attitude toward life (translated by Han 1999). Culture also refers to various forms of human activities and the symbolic structure these activities display (Leong and Clark 2003). Barthes (1992) mentioned that culture is a language and added a second level (i.e., signification) to the equation (i.e., signifier/signified = signs) proposed by Saussure, transforming primary sign meanings into secondary sign meanings (Storey 2001). Product semantics, which studies the subtle relationships between signs and products, enables sign semantics to be applied to product designs in practice and allows the appearance of technological products to be related to people's daily activities (Hjelm 2002; Krippendorff 2006).

Cultural Codes

Barthes used the term "cultural code" in his book *S/Z: An Essay*, where he performed structural analysis of a narrative work and defined five functional codes with textual implications, one of which was cultural code. Silverman (1983) stated that cultural codes offer a connotative structure, and each code is associated with a cluster of symbolic attributes. Clotaire Rapaille, author of *The Culture Code*, introduced the concept of cultural unconsciousness, arguing that cultural codes are meanings we attach to objects subconsciously through the culture from which we grow up (Clotaire 2006). Rapaille (2006) suggested that products establish a deep emotional bonding (an imprint) with their consumers, and favorable products must have the ability to "activate" consumers' cultural codes. Cultural code has also been discussed in marketing studies. Schroeder (2009) contended that cultural and historical contexts, moral ethics,

and traditional customs must be addressed when creating brand value. From a design perspective, cultural codes are the symbolic meanings or the story of image symbols; cultural codes are not only the smallest elements constituting the meanings of material signs (sounds, images), but can also be adopted to investigate the principles governing how these elements should be combined as well as the meanings of these elements after they have been combined in relevant culture.

Cultural Products The United Nations Educational, Scientific and Cultural Organization defined cultural product generally refers to consumer goods that convey opinions, symbols and lifestyles. Through informing or entertaining, they build collective identity and influence cultural activities. The results of individual or collective creativity are reproduced on the basis of copyright through industrial processes and global distribution, thus promoting the exchange of cultural objects through books, magazines, multimedia products, software, records, movies, videotapes, sound and light entertainment, crafts and fashion design. Ultimately, they offer the public diversified cultural options. Chen and Chuang (2008) remarked that products should be manufactured from a consumer-centric perspective and expounded that consumers do not need all aspects of a product to be optimal to purchase it; all they need is a satisfying product with emotional value. This means that when consumers purchase cultural products, they expect the products to meet their spiritual needs in addition to providing basic functions. Accordingly, product sign value has become a factor influencing consumer purchase decisions. People buy cultural products not merely for their functions, but also to possess their symbolic meanings (Goldman and Papson 1996).
Cultural products are created through reviewing and reflecting on the cultural elements originally contained in specific objects, using design techniques to generate a modern look of such cultural elements, and exploring the spiritual satisfaction that can be achieved through object use; these characteristics differentiate cultural products from ordinary products (Ho et al. 1996). The design renders cultural products subtler and more appealing to consumers (Folkes and Matta 2013). Often serving as an extension of everyday-life culture and memories, cultural and creative products involve the creation cultural context and the passing down of culture and art. The combination of creativity and design as well as the emphasis on qualia characteristics are the key factors that Taiwan's cultural and creative products can strengthen the cultural and creative industry (Yen et al. 2014). From a business model perspective, cultural creativity entails using culture to manufacture products used in people's daily lives, creating product brands in the process. From a daily life perspective, companies use business models to make culture a part of people's lives. In other words, through designing, culture can be transformed into products used in daily life, creating a life culture in the process (Lin 2014).

3 Applying Semiotics to Design Cultural Products

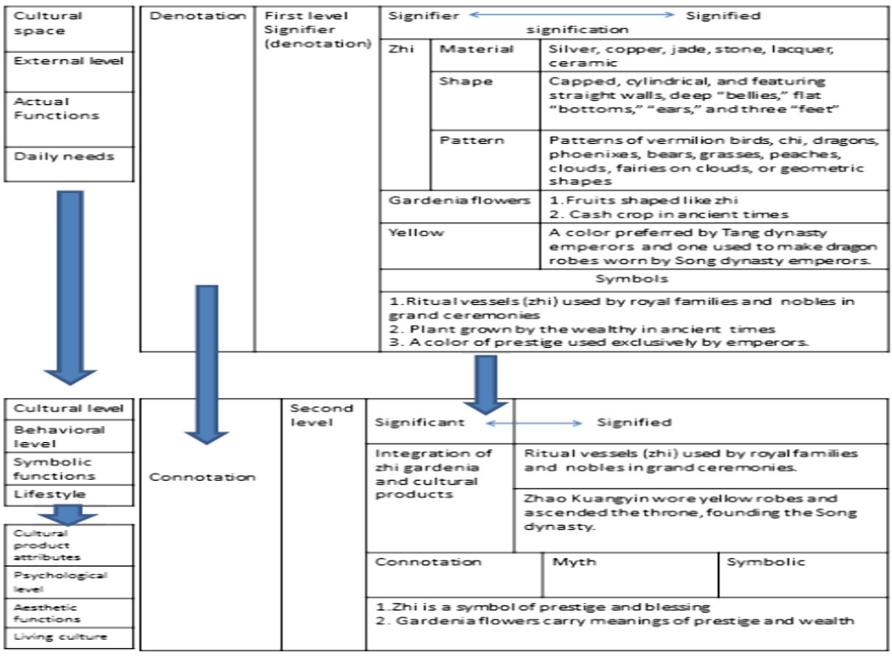
3.1 Translating Model for the Cultural Implications of Gardenia

The focus of cultural design is imbuing products with cultural depth. When designing and developing cultural products, designers must consider the relevance of the products

to the cultural elements they embody as well as ensure the completeness of the cultural presentation techniques. Thus, designers must first understand the culture, and develop cultural attributes according to target consumer groups. Additionally, they should use a combination of forms, colors, materials, and structure to present these attributes.

The translation from the first level of meaning, denotation, to the second level of meaning, the connotation, myth, and symbolic meaning as indicated by Barthes, involves an analysis of the interaction between a cultural code and the social culture. For the first level of meaning (connotation), sign translation refers to the relationship between the signifier and its signified. A literature review revealed that the gardenia earned its name because its fruits shared a similar shape with *zhi*. During the Han dynasty, families with a thousand *dan* (an ancient measure word meaning 100 L) of gardenia (a cash crop with high economic value) rivaled those with a thousand horses in wealth. Additionally, the color (i.e., yellow) of the dye extracted from gardenia was favored and used during the Tang and Song dynasty exclusively by emperors, respectively. In terms of denotations gardenia generated considerable profits, had fruits shaped like *zhi*, and produced dye with a color associated with nobles.

Table 3. Translating model of gardenia's cultural meanings



Connotations are cultural meanings given by societies. The connotations of *zhi* came from China's important national, traditional cultural ceremonies. The use of *zhi* as ritual vessels in ceremonies, an interaction between the object and cultural values,

made *zhi* a symbol of prestige and blessing. Historical records showed that yellow was the color used exclusively by the emperor, making yellow the color of nobility. The custom of using yellow for emperors led to the color becoming a symbol of prestige. As a cash crop with high economic value that could be used to create dye used by emperors and contained fruits that shared a similar shape with *zhi*, gardenia carries a cultural meaning of prestige and wealth. Table 3 presents the translating model of gardenia's cultural meanings.

3.2 Cultural Characteristics of Gardenias and Product Design Concepts

Three-Level Design Concepts Involving Gardenias

This study drew its design inspirations from Lin (2005c, 2010) and examined the types and forms of gardenia-inspired cultural products. The cultural characteristics and design concepts of the products were analyzed, and the cultural characteristics of *zhi* and gardenias described in ancient books and literature were presented. The design levels of transfer, transit, and transform were used to obtain the cultural and symbolic meanings of *zhi* and gardenia, showing how historical culture and classical literature were integrated into modern culture product designs (Table 4).

Material Level Cultural Product Design

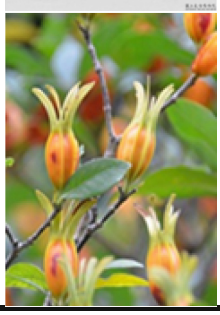
Regarding the design concept transfer proposed by Lin (2014), design transfer on the material level can be achieved by employing various methods including understanding and utilizing colors and ornamentation, using and matching materials innovatively, capturing overall or partial styling characteristics, enhancing or simplifying lines, engaging or not engaging in detailed processing, and restructuring the product. Inspired by the shape of gardenia fruits and their use as a source of bright yellow dye, this study created a gardenia fruit-shaped light fixture with a powerful visual design; the color of yellow was utilized to stimulate the senses, evoke a sense of warmth, and attract consumers' attention. The design of this light fixture also focused on the functional perspective aiming to spark consumers' purchase intention. The product is shown in Fig. 3.

Behavioral Level Cultural Product Design

Behavioral level design transfer can be classified as the transit of cultural characteristics. Lin (2014) proposed transiting cultural characteristics into use behavior-based designs through methods including preserving and extending functions; maintaining operation actions and forms; providing intuitive, convenient, and safe designs; observing object trajectory changes, and trying various forms of structuring and their combinations.

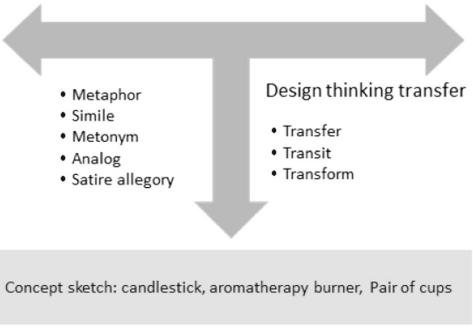
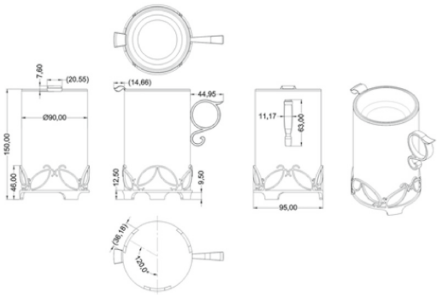
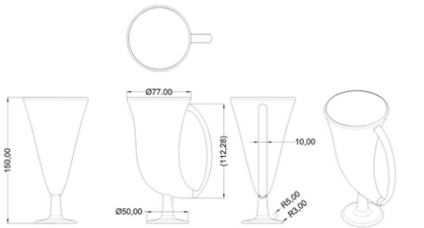
A literature review revealed that in ancient times, *zhi* was a ritual vessel as well as a wine vessel used in ceremonies. This study adopted the two-level sign transfer presented by Barthes to consider *zhi* a symbol of prestige and blessings. The color yellow and gardenia, which symbolized prestige and wealth in the Han dynasty, respectively, were employed. The aforementioned cultural characteristics were combined to design a product, in which qualia and user experience were considered. In other words, the functions of *zhi* as ritual vessels and their shapes and ornamentation were extended and

Table 4. Three-level design concepts involving gardenia

Compilation and analysis of cultural characteristics	Classification: Han dynasty		Name of artifact	*Zhi*
	Image		Artifact category	Ritual and wine vessels
	 		Material	Silver, copper, jade, stone, lacquer, ceramic
			Shape	Capped, cylindrical, and featuring straight walls, deep "bellies," flat "bottoms," "ears," and three "feet"
			Embossed ornament	
			Animal	Patterns of vermilion birds, *chi*, dragons, phoenixes, or bears
			Plant	Patterns of grasses, peaches, and persimmons
			Human	Patterns of fairies on clouds
			Other	Patterns of clouds or geometric shapes
	Usage		*Zhi* were used as wine vessels for rituals	
	"Grammar" and configuration of the shapes	Appearance	• *Zhi* and gardenia fruits share a similar shape • Gardenia fruits can be used to make yellow dye	
		Connotations	• A *zhi* is a round wine vessel • Yellow was the color used exclusively by emperors	
		Cultural significance	• The use of *zhi* as ritual vessels in ancient times subsequently made *zhi* a symbol of prestige and blessings • Tang and Song dynasty emperors' love for yellow resulted in the color becoming a symbol of prestige • Literature has shown that growing gardenias was a sign of wealth	

(Continued)

Table 4. *(Continued)*

	Concept formation		
	Cultural products	Gardenia light fixture	
		Gardenia aromathera-py burner	
		Pair of sheep horn shaped cups	

transited, the purposes (i.e., serving as ritual vessels and a symbol of blessings) of *zhi* in important ceremonies were retained, and the safety and convenience of use were considered. The structural form of *zhi* was transited to design an aromatherapy burner filled with the cultural meaning of *zhi*.

Fig. 3. Gardenia light fixture (Color figure online)

The product materials used mainly comprised transparent glass with metal at the bottom. The shape of gardenia fruits, embossed ornamentation found on *zhi* in ancient times, and a dragon-pattern handle derived from transiting *chi* (a mythical creature resembling dragon) were incorporated into the design of the burner to elicit a sense of prestige. Essential oil could be added to the upper layer of the burner for aromatherapy, and a candle with gardenia essential oil could be placed inside. The color yellow, used exclusively by emperors, echoed with the dragon-shaped handle to evoke a sense of prestige. This design transferred cultural implications into a cultural product to evoke thoughts of the past. The product is shown in Fig. 4.

Fig. 4. Gardenia-inspired aromatherapy burner (Color figure online)

Cultural Product Design Conveying Intangible Ideas

Lin (2014) suggested designing cultural products by highlighting the special meanings, stories, and cultural characteristics of the products, transforming these special meanings, records, and legends of culture to evoke users' feelings, present lifestyles, and reflect on related matters. In this way, intangible ideas are conveyed in the form of tangible elements.

Zhuangzi described "*zhi* talk" as words spoken unintentionally, which are natural displays of thought. The so called "utterances produced on a daily basis," or "utterances renewing on a daily basis," constitute a creative language that evolves continuously. This suggests that *zhi* and language have a metaphorical relationship, where *zhi*, which possesses a physical form, facilitates the natural and endless conveyance of intangible ideas through language as men talk joyfully and enthusiastically during wine-drinking.

The *Analects* mentions fights between gentlemen. Gentlemen exhibit modesty and avoid picking up fights with others in most occasions. Even in archery competitions,

they compete politely, and winners offer wine to losers to show their etiquette. The archery competition may be extended to mean verbal battles or ideological exchanges, in which gentlemen display a sense of humility. Even when they gentlemen are involved in arguments, they use wine (served in *zhi*) after the verbal arguments to turn hostility into friendship and demonstrate broad-mindedness. This study designed *zhi* to transform abstract meanings (i.e., utterances renewing on a daily basis) into tangible objects. Sheep horns, bows, and arrows served as the sources of inspiration for the product design; the sheep horn and bow-shaped handle of the product indicated conflict and archery competition, respectively, and fights between gentlemen were transformed into a pair of cups. The core value of the product design was its emphasis on users' feelings, making it a design transfer on the psychological level. The products are shown in Fig. 5.

Fig. 5. Pair of sheep horn–shaped cups

3.3 Quantitative Research and Analysis

In the 1920s through 1940s, gardenias were a crucial cash crop in the Fuzhou area and a major source of yellow dye and essential oils. The gardenia earned its Chinese name (*huangzihua)* because its fruits resemble *zhi*, a ritual vessel used in ancient times. Eloquently debating, exchanging thoughts, and talking joyfully with zest and gusto during wine-drinking sessions were all part of the daily lives of scholars and literati in the past. This study used local cultural characteristics to design three cultural products: a gardenia light fixture, a gardenia aromatherapy burner, and a pair of sheep horn–shaped cups. The study used a questionnaire to analyze and compare perceptions and feelings regarding the gardenia-inspired cultural product designs. The questionnaire results may serve as a reference for future studies in designing related products.

Descriptive Statistical Analysis

The questionnaire survey was conducted in November and December of 2018, and the participants consisted of university students, teachers, artists, designers, and others without an art background. The questionnaires were presented in Google Forms, where the participants completed the questionnaires based on their understanding of the questions. The questionnaire measured four dimensions; each dimension contained two or three questions, for which the answers were scored from 1, *complete disagreement*, to 5, *complete agreement*. All 137 questionnaires completed were valid, yielding a

valid response rate of 100%. The 137 questionnaires subsequently underwent a basic descriptive statistical analysis.

An analysis of the questionnaire participants demonstrated the following distributions. (a) Regarding gender, 101 participants (73.7%) were women, and 36 (26.3%) were men. (b) Regarding age, 60 participants were (43.8%) aged 41–50 years, 35 (25.5%) were aged 31–40 years, 22 (16.1%) were aged 51 years or older, and 20 (14.6%) were aged 30 years or younger. (c) In terms of education, 68 (49.6%) had graduated from graduate schools, 60 (43.8%) had graduated from colleges or universities, and 9 (6.6%) had other education levels. (d) Regarding their professional backgrounds, 25 people (18.2%) had an art-related background, 17 (12.4%) had a design-related background, and 95 people (69.3%) had other learning backgrounds.

The participants' opinions about the gardenia-inspired cultural products were as follows.

1. Gardenia light fixture: In terms of appearance, 91.2% of the participants agreed that the product used the appearance of the gardenia appropriately to form its overall appearance; 51.1% and 40.1% gave scores of 5 and 4, respectively. Additionally, 57% of the participants agreed that the product used the appearance of *zhi* to form its overall appearance appropriately, and 59.1% of the participants agreed that the product used the ornamental elements of *zhi* to form its overall appearance appropriately. Concerning function, 82.5% of the participants agreed that the product looked beautiful and unpretentious, with 46.7% and 35.8% of the participants giving scores of 5 and 4, respectively; 56.9% of the participants agreed that the product was convenient to use; and 60.6% of the participants agreed that the functions of the product met the needs of modern people. Regarding emotional perceptions, 59.1% of the participants agreed that the product demonstrated the fun of history, 73.7% of the participants agreed that the product displayed cultural meanings, and 59.8% of the participants agreed that the product touched them emotionally. With respect to overall assessment, 59.1% of the participants agreed that the product was creative and ingenious, and 60.6% of the participants agreed that they were fond of the product.
2. Gardenia aromatherapy burner: In terms of appearance, 48.2% of the participants agreed that the product used the appearance of the gardenia appropriately to form its overall appearance, 75.9% of the participants agreed that the product used the appearance of *zhi* appropriately to form its overall appearance, and 70.1% of the participants agreed that the product used the ornamental elements of *zhi* appropriately to form its overall appearance. Concerning function, 69.3% of the participants agreed that the product looked beautiful and unpretentious, 70.8% of the participants agreed that the product was convenient to use, and 62.8% of the participants agreed that the functions of the product met the needs of modern people. Regarding emotional perceptions, 55.4% of the participants agreed that the product demonstrated the fun of history, 62% of the participants agreed that the product displayed cultural meanings, and 55.5% of the participants agreed that the product touched them emotionally. With respect to overall assessment, 66.4% of the participants agreed that the product was creative and ingenious, and 59.2% of the participants agreed that they were fond of the product.

3. Pair of sheep horn–shaped cups: In terms of appearance, 46.7% of the participants agreed that the product used the appearance of the gardenia appropriately to form its overall appearance, 59.9% of the participants agreed that the product used the appearance of *zhi* appropriately to form its overall appearance, and 45.3% of the participants agreed that the product used the ornamental elements of *zhi* appropriately to form its overall appearance. Concerning function, 84% of the participants agreed that the product looked beautiful and unpretentious, 70.8% of the participants agreed that the product was convenient to use, and 67.9% of the participants agreed that the functions of the product met the needs of modern people. Regarding emotional perceptions, 67.9% of the participants agreed that the product demonstrated the fun of history, 64.2% of the participants agreed that the product displayed cultural meanings, and 76.6% of the participants agreed that the product touched them emotionally. With respect to overall assessment, 75.2% of the participants agreed that the product was creative and ingenious, and 63.5% of the participants agreed that they were fond of the product.

Research and Analysis

This study performed statistical analysis on the results of four aspects of perceptions, namely appearance, function, emotion, and overall assessment determined by the questionnaire, and various statistical data were investigated to determine their effects on how creative and ingenious the participants thought the products to be and how fond the participants were of the products. Results showed that gender, age, and academic background influenced how creative and ingenious the participants thought the products to be and how fond they were of the products, and participants' perceptions of the products' functions and emotions had an effect on their overall assessment of the product. The data were generalized to serve as a reference for future design studies (Table 8).

Table 5. Results of *t* test for the effect of gender on overall product assessment ($N = 137$)

Product	Item	Gender	Mean	SD	*t* value	Sig.
Gardenia light fixture	Q10	Male	3.72	1.085	−2.471*	0.015
		Female	4.18	0.899		
Gardenia aromatherapy burner	Q10	Male	3.53	1.055	−2.057*	0.042
		Female	3.93	0.993		
	Q11	Male	3.33	1.171	−2.167*	0.032
		Female	3.79	1.061		

P < .05*

Table 6. Mean analysis on the effect of age on perceived product function ($N = 137$)

Product	Aspect	Age group	N	Mean	*F* test	Sig.
Gardenia light fixture	Function	-30	20	3.35	3.567*	0.016
		41–50	60	4.01		

*P < .05

Table 7. ANOVA for the effect of age on perceived product function (N = 137)

Product	Aspect	SS		df	MS	F test	Sig.
Gardenia light fixture	Function	Between groups	7.836	3	2.61	3.567*	0.016
		Within group	97.37	133	0.73		
		Sum	105.21	136			

*P < .05

Table 8. Effect of design-related background on overall product assessment (N = 137)

Cultural product	Item	N	Mean
Gardenia light fixture	Q10	17	3.41
	Q11	17	3.12
Gardenia Aromatherapy burner	Q10	17	3.12
	Q11	17	2.82
Pair of sheep horn-shaped cups	Q10	17	3.12
	Q11	17	3.06

Table 9. ANOVA on the effect of background on overall product assessment (N = 137)

Product	Item	SS		df	MS	F test	Sig.
Gardenia light fixture	Q10	Between groups	8.497	2	4.24	4.783*	0.010
		Within group	119.03	134	0.88		
		Sum	127.53	136			
	Q11	Between groups	11.153	2	5.57	5.214**	0.007
		Within group	143.31	134	1.07		
		Sum	154.46	136			
Gardenia aromatherapy burner	Q10	Between groups	19.460	2	9.73	10.65***	0.000
		Within group	122.33	134	0.91		
		Sum	141.79	136			
	Q11	Between groups	14.477	2	7.23	6.392**	0.002
		Within group	151.74	134	1.13		
		Sum	166.21	136			
Pair of sheep horn-shaped cups	Q10	Between groups	13.810	2	6.90	7.360**	0.001
		Within group	125.72	134	0.93		
		Sum	139.53	136			
	Q11	Between groups	9.808	2	4.90	4.247*	0.016
		Within group	154.71	134	1.15		
		Sum	164.52	136			

*P < .05, **P < .01, ***P < .001

Table 10. Regression analysis on the effects of participants' perceptions of product functions and emotions on how creative and ingenious they thought the products to be (N = 137)

Product	Aspect	B	β	t value	Sig.
Gardenia light fixture	Functional	0.373	0.339	4.897***	0.000
	Emotional	0.493	0.464	5.454***	0.000
Gardenia aromatherapy burner	Functional	0.291	0.259	0.004**	0.004
	Emotional	0.610	0.543	0.000***	0.000
Pair of sheep horn-shaped cups	Functional	0.485	0.424	5.967***	0.000
	Emotional	0.534	0.503	6.386***	0.000

*P < .05, **P < .01, ***P < .001

Table 11. Regression analysis on the effects of participants' perceptions of product functions and emotions on how they were fond of the products (N = 137)

Product	Aspect	B	β	t value	Sig.
Gardenia light fixture	Functional	0.563	0.464	6.563***	0.000
	Emotional	0.562	0.480	5.524***	0.000
Gardenia aromatherapy burner	Functional	0.457	0.376	4.559***	0.000
	Emotional	0.554	0.456	5.622***	0.000
Pair of sheep horn-shaped cups	Functional	0.530	0.427	6.636***	0.000
	Emotional	0.497	0.432	6.055***	0.000

*P < .05, **P < .01, ***P < .001

Table 5 shows the t-test results for the effect of gender on overall product assessment, revealing significant differences in overall assessment between male and female participants for the gardenia light fixture and gardenia aromatherapy burner. Compared with the male participants, the female participants thought the products were more creative and ingenious, and they were fonder of the products. Table 6 shows the mean analysis results for the effect of age on perceived function (N = 137), indicating significant differences between participants of different ages for the gardenia aromatherapy burner. The difference between perceived function for participants aged 41–50 years and for those 30 years or younger was significant at the 0.016 level. Tables 7 and 9 correspondingly show the effect of design-related background on overall assessment (N = 137) and one-way analysis of variance results on the effect of background on overall assessment (N = 137), revealing that the participants with design-related backgrounds gave the three cultural products lower overall assessment scores than those with other backgrounds (including those with art-related background). Tables 10 and 11 demonstrate that perceptions of both functions and emotions exhibited a significant effect on participants' overall assessment of the cultural products. These analysis results and the opinions of design experts can be incorporated and used as a reference when designing cultural products in the future.

4 Conclusion and Recommendations

This study demonstrated that both the functions and cultural meanings of cultural products as well as the feelings they evoke in consumers influence consumers' overall assessments of products. Chris Chang, manager of Prada Taiwan, once said that what Prada sells is a lifestyle, or a taste. Today, consumers no longer purchase products solely for their practical value; they also pay attention to the symbolic meanings of the products. Consumers will continue to purchase products if they can see cultural meanings in the products, have feelings toward them, and receive joy from them.

This study adopted a core theory of semiotics (i.e., the two orders of signification) proposed by Barthes and investigated the intangible cultural codes of, a cash crop grown in the Fuzhou area in what is now New Taipei City in the 1920s through 1940s. Subsequently, three levels of design thinking were used to translate gardenia and design cultural products based on it. Unlike the traditional design approach, which highlights physical and functional design, this study imbued the products with local cultural meanings. The study results and recommendations for future research directions are as follows.

(1) This study incorporated cultural code design methods and the three levels of design thinking to develop cultural product designs. Empirical results verified that by decoding intangible culture and transferring, transiting, and transforming cultural elements into design, cultural products with intangible meaning could be designed and developed.
(2) Future studies can reference this study to devise a procedure to design their cultural product, and apply the procedure in the creative design of cultural assets of intangible value in Taiwan, such as local operas, historical buildings, and unique local ceremonies. Such endeavors will preserve Taiwan's traditional culture, enable the development of cultural products, and facilitate local industry development, driving the regional economy.

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