

Retraction

Retracted: Morphological Bias of Ancient Artifacts: A Case Study of Incense Burners in Ming and Qing Dynasties

Journal of Mathematics

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] Y.-F. Chen and J. Wei, "Morphological Bias of Ancient Artifacts: A Case Study of Incense Burners in Ming and Qing Dynasties," *Journal of Mathematics*, vol. 2021, Article ID 7859189, 9 pages, 2021.

Research Article

Morphological Bias of Ancient Artifacts: A Case Study of Incense Burners in Ming and Qing Dynasties

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This study verifies the relevance of the combination of traditional Chinese artifacts and perceptual semantic research. It provides new research ideas to study the Chinese artifact culture. Moreover, it helps people to understand the cultural spirit better and design crystallization of traditional artifacts. This study considered Chinese traditional incense burners in Ming and Qing dynasties to adopt morphological analysis and affinity diagram to select representative experimental samples. Furthermore, this research applied the perceptual engineering theory to explore the relation between design group's description of perceptual semantics and the shape of incense burners. The focuses were the design group on the shape and style of ancient artifacts in aesthetic consideration. According to the results of semantic principal component analysis, the perceptual semantic bias of the design group towards incense burners was concentrated, which is related to the style acceptance of incense burners. Among these related incense burner styles, the design group paid more attention to the proportional design of "incense burner foot" in the perceptual bias of incense burner shape and preferred the proportional incense burner shape of "long foot."

1. Introduction

Chinese incense burners became one of the popular artifacts in Tang and Song dynasties [1]. Under the rule of ritual system in the Ming Dynasty, a large number of porcelain incense burners became necessary products in the life of palace nobles and people [2]. The Qing Dynasty, following the development of incense burner technology in the Ming Dynasty, became another golden period in the history of Chinese incense burner development [3]. The culture of incense burners is closely related to people's aesthetic consciousness at that time. Aesthetic consciousness is the active reflection of the subject to the aesthetic attribute of the objective image, including people's aesthetic feeling, experience, viewpoint, and ideal [4]. Aesthetic consciousness comes from the process of interaction between humans and nature, which is a psychological process of grasping aesthetics through perceptual intuition to achieve rational essence. Active aesthetic feelings rather than passive perceptions have both thinking and emotional reflection and

recognition [5]. Aesthetic consciousness is related to the level of social development and restricted by the society, but at the same time, it develops into aesthetics with individual characteristics [6]. The essence of aesthetic contemplation is a kind of perceptual activity state in which the subject concentrates on the object and forgets the existence of other things, which is the starting point of all artistic activities [7].

Perception is the most direct reaction of human beings to external things in practice. Moreover, it is also the inevitable existence of people's understanding of things and behavior reaction. It has a great influence and guiding effect on people's various behaviors [8]. In the perceptual research of incense burners, the so-called perception refers to the audience's subjective evaluation of the size, color, shape, pattern, and other artifact attributes of incense burners [9]. Perception is not determined by the attribute of a single thing and can hardly be measured [10]. There are many uncertainties in people's perception of artifacts, which leads to ups and downs in people's aesthetic cognition of artifacts [11]. However, the core idea is still to quantify people's

feelings about things [12]. Perceptual thought is an internal thing, while the material world is an external thing. The transformation from perceptual thought to the material world is “externalization” [13]. The core idea of ancient artifact design also comes from an “externalization” form produced by people’s perceptual needs on artifacts. Gestalt theory of Gestalt Psychology emphasizes the integrity of objects and the role of human psychology in the organizational structure and integration of objects [14]. In addition to understanding things through perceptual perception, people also perceive, distinguish, and confirm them, which is called shape recognition or pattern recognition [15].

Kansei Engineering studies people’s psychological needs and determines the relationship between perceptual perception and shape recognition [16]. Such needs are people’s intuitive psychological and perceptual reflections, which are contained in spirit or physiology [17]. People perceive perceptual information from incense burner objects through external shape recognition. Furthermore, they employ their own knowledge and experience to explain the characteristics and attributes of incense burner objects. This way they obtain the Gestalt meaning of incense burner objects. The principle of “simplification” in Gestalt Psychology holds that under specific conditions, shape recognition will be presented in the simplest structure and the generated “shape” has clear and strong stimulation [18]. People’s perceptual psychology will produce some special images due to visual shape recognition, because “shape” is the most important basic object in visual phenomena [19]. The form of incense burners has the principle of simplification and a complete shaping system, which enables people to better grasp the characteristics of shape recognition and produce a deep visual impression. In modern design, audiences’ perceptual needs are often the focus of designers’ attention, while aesthetics is a psychological activity that affects the audience’s perceptual needs. Kansei Engineering can explore the factors of audience perception level and transform perceptual needs and images into elements of design details [20].

2. Research Method and Procedures

Step 1. Subgroup between morphological groups

R. Faulkner pointed out that “appearance, block and structure are narrow words, but shape is the most comprehensive. We use shape to describe the internal structure and visual shape, and even the block that defines outline and shape” [21]. Shape is the form of human thinking, which is of objectivity and subjectivity, can include the appearance, form, and internal structure of morphological objects. The main core of morphology is to discuss the essence and composition of things, and at the same time, it also emphasizes the discussion of the composition structure of things at the connotation level [22]. In the process of morphological analysis, the morphological classification is carried out by the link between the shape characteristic attributes of incense burners in Ming and Qing dynasties and the hierarchical membership relationship of each level, showing systematic induction and coding [23]. According to

the “style” characteristics of incense burners in Ming and Qing dynasties as the classification standard, incense burner styles such as Li-type tripod incense burner, Gui-shaped incense burner, Ding-shaped tripod incense burner, incense burner in the shape of square Ding, polyhedral-type incense burner, tall tripod incense burner, cylindrical tripod incense burner, incense burner with animal handles, incense burner with ring handles, alms-bowl-shaped incense burner, and square-shaped incense burner can be drawn (Figure 1).

The research of traditional creation relies on literature and inference analysis, and it is difficult to provide objective and reasonable inference for the crux of the problem. The affinity diagram rule can integrate the majority opinions of experts and audiences, sum up various facts from scattered arguments in a structured way, and explore “creative skills” with new meanings. The classification principle of the affinity diagram was adopted. In the classification, five professional professors with more than 5 years of teaching experience in ancient artifact research, shape design, and other related disciplines and relevant background in shape research were invited to select representative incense burner images that met the feature level to obtain experimental samples through shape analysis according to the aesthetic intuitive perception evaluation of incense burner shape feature attributes (Figure 2). Then, they were divided into two experimental groups: Ming Dynasty incense burners and Qing Dynasty incense burners.

Step 2. Semantic Survey

Semantic analysis was put forward by American psychology professor C. E. Osgood in 1942. It is a research method of “common feeling.” It uses a semantic subscale to study the meaning of things and is used as a manifestation of the psychological scale [24]. The generation of common sensation is a phenomenon in human sensation. When any sensory system is stimulated, other sensory systems resonate in series at the same time, which is called the “synesthesia” phenomenon in psychology [25]. The semantic subscale consists of three parts: concept, scale and subject. It is used to study cultural comparison, differences between individuals and groups, and people’s attitudes and views on the surrounding environment or things [26]. The semantic difference method is the cornerstone of perceptual image research, which reflects the correlation between the overall aesthetic image tendency by reducing the dimension of the subjects’ multidimensional aesthetic image space [27]. The semantic subscale of incense burners in Ming and Qing dynasties mainly selected images first and used Likert 5-point and other scales for evaluation. The evaluation scale consists of pairs of adjectives (Table 1) [28].

The subjects of the experiment were 200 designers or professional teachers with design-related backgrounds. Subjects have certain design professional reserve knowledge and aesthetic level and have more than 3 years of experience in design-related work as semantic survey samples. The design group chose concepts and images for concrete or abstract objects and showed the appropriate evaluation scale through multiple sets of extremely opposite paired adjectives [29].

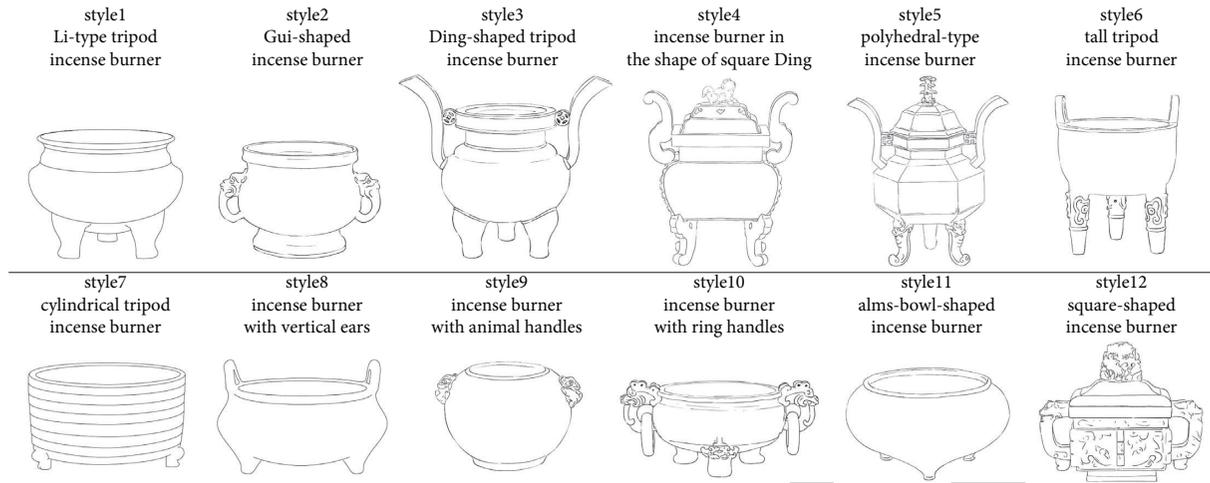


FIGURE 1: Incense burner style in the Ming and Qing dynasties.

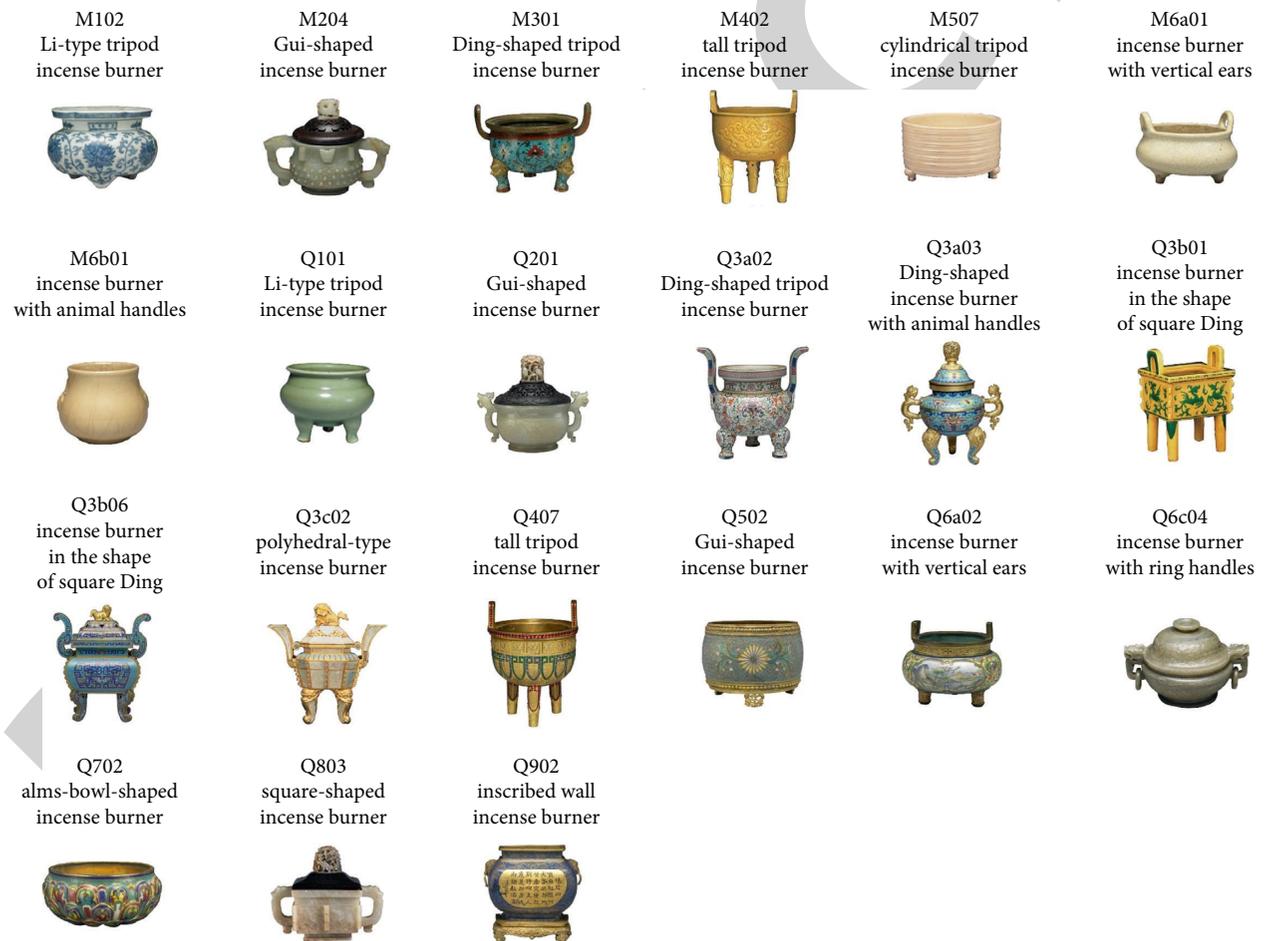


FIGURE 2: Experimental samples of incense burners in the Ming Dynasty (M) and Qing Dynasty (Q).

TABLE 1: Incense burner Kansei description semantic group.

Strange-ordinary	Special-plain	Rich-monotonous	Heavy-light	Colorful-dim
Gentle-stiff	Luxurious-simple	Concrete-abstract	Traditional-fashionable	Simple-complex
Regular-messy	Artistic-superficial	Amazing-plain		

Step 3. Principal component analysis

Principal component analysis was proposed by K. Pearson in 1901. It is a statistical method that can simplify huge data and find out the main direction of variation [30]. Principal component analysis is used to linearly combine the original P variables (assumed to be P) in the data to obtain K new variables (assumed to be K). In the principle of data simplification, the K value is usually less than the P value and the K new variables must have the ability to explain the covariable structure of the original variables [31]. By calculating the correlation between the data, the P variables that have correlation with each other are linearly combined to make the component variation reach the maximum. The largest individual difference that is highlighted on the original data is K variables, and K value is the number of principal components [32]. Principal component analysis enables researchers to obtain information that is not easy to observe on the surface and generates new data combinations through coordinate axes to improve the overall variance and express data differences [33]. In addition to the equivalence between variance and data difference, it is also necessary to consider the pointer of message volume. There are many types of new variables formed by linear combination. New variables containing as much pointer information as possible should be selected as far as possible. According to relevant statistical theories, variance is generally considered as an index reflecting the amount of information contained in variables [34]. The higher the value of the global variance, the more information may be obtained.

3. Results

In this section, the principal components of correlation analysis are described.

3.1. Principal Component Correlation of Incense Burners in the Ming Dynasty. The KMO and Bartlett test of factor analysis showed that KMO was 0.972, which indicated that the obtained data were suitable for factor analysis. Bartlett's spherical test showed significant P values of $0.000 < 0.05$, which also indicated that the data were suitable for factor analysis, indicating that the questionnaire had a structural effect [35]. The principle of extracting the number of principal components is the first m principal components whose corresponding eigenvalues are greater than 1 [36]. To some extent, the eigenvalue can be regarded as an index indicating the influence strength of the principal component. If the eigenvalue is less than 1, it means that the interpretation strength of the principal component is not as strong as the average interpretation strength of directly introducing an original variable. Therefore, the eigenvalue greater than 1 can generally be used as the inclusion standard [37].

From the total variance explanation (Table 2), four principal components with eigenvalues greater than 1 were extracted and the four eigenvalues are 4.846, 3.267, 2.722, and 1.205, respectively. According to the analysis of Figure 3, the eigenvalues of common factor 1, common factor 2,

common factor 3, and common factor 4 are all greater than 1, indicating that the influence index is large, so it shows that there are four principal components that have important influence on the shape of the censer in the Ming Dynasty.

The variance contribution of the first principal component is 37.278%, the variance contribution of the second principal component is 25.134%, the variance contribution of the third principal component is 20.935%, and the variance contribution of the fourth principal component is 9.267%. After rotating the load, it can be known that the contribution rate of the four principal component variances has changed, but the total cumulative variance contribution rate has not changed and it is still arranged in descending order. The contribution rate of the first principal component variance is 34.018%. The contribution rate of the second principal component variance is 28.342%, the contribution rate of the third principal component variance is 18.064%, and the contribution rate of the fourth principal component variance is 12.192%. Its total cumulative variance contribution is 92.615% (Table 2), which is higher than the standard index of 85%, indicating that these four principal components contain all the information in the pointer.

Through in-depth calculation of the importance of each perceptual vocabulary to the design of incense burners in the Ming Dynasty, the component matrix of four common factors for perceptual image vocabulary was obtained and the principal components 1, 2, 3, and 4 were set as E_1 , E_2 , E_3 , and E_4 . The component coefficient matrix of four principal components corresponds to each perceptual phrase. Factor scores of E_1 , E_2 , E_3 , and E_4 in each incense burner sample were calculated in SPSS and expressed with b , b_2 , b_3 , and b_4 . Component coefficient scores in equation (1) and Table 3 were used to calculate the comprehensive factor score of the samples, which was denoted by B (Table 4) [38].

$$B = \left(\left(\frac{34.018\%}{92.615\%} \right) \times b_1 + \left(\frac{28.342\%}{92.615\%} \right) \times b_2 + \left(\frac{18.064\%}{92.615\%} \right) \times b_3 + \left(\frac{12.192\%}{92.615\%} \right) \times b_4 \right). \quad (1)$$

In equation (1), b_1 is the first common factor score of the sample; b_2 is the second common factor score of the sample; b_3 is the third common factor score of the sample; and b_4 is the fourth common factor score of the sample.

Rotation matrix analysis showed that "gentle," "traditional," and "artistic" were closely related to principal component 1; "strange," "characteristic," "gorgeous," and "concrete" are closely related to principal component 2; "heavy" and "luxurious" are closely related to principal component 3; "rich" and "simple" are closely related to principal component 4, which are greater than the default extraction standard of 0.6, indicating that they meet the perceptual needs of design groups. Table 4 shows that the Ming Dynasty incense burner shapes of M402 (tall tripod incense burner), M6a01 (incense burner with vertical ears), M6b01 (incense burner with animal handles), and M204

TABLE 2: Explanation of total variance of incense burners in the Ming Dynasty.

Total variance explanation									
Initial eigenvalue of component			Extracting the sum of squares of loads			Sum of squares of rotating loads			
Total variance	%	Accumulated %	Total variance	%	Accumulated %	Total variance	%	Accumulated %	
1	4.846	37.278	4.846	37.278	37.278	4.422	34.018	34.018	
2	3.267	25.134	3.267	25.134	62.413	3.684	28.342	62.359	
3	2.722	20.935	2.722	20.935	83.348	2.348	18.064	80.424	
4	1.205	9.267	1.205	9.267	92.615	1.585	12.192	92.615	
5	0.689	5.300							
6	0.271	2.085							
7	7.035e ⁻¹⁶	5.411e ⁻¹⁵							
8	2.162e ⁻¹⁶	1.663e ⁻¹⁵							
9	4.998e ⁻¹⁷	3.844e ⁻¹⁶							
10	-3.698e ⁻¹⁷	-2.844e ⁻¹⁶							
11	-1.806e ⁻¹⁶	-1.389e ⁻¹⁵							
12	-2.834e ⁻¹⁶	-2.180e ⁻¹⁵							
13	-3.645e ⁻¹⁶	-2.804e ⁻¹⁵							

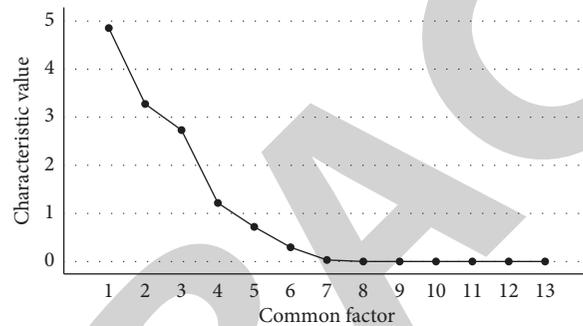


FIGURE 3: Factor analysis of the incense burner in the Ming Dynasty gravel map.

TABLE 3: Component matrix and composition score coefficient matrix of censers after rotation in the Ming Dynasty.

	Rotated component matrix				Component score coefficient matrix			
	Component				Component			
	1	2	3	4	E ₁	E ₂	E ₃	E ₄
Strange	-0.594	0.728	0.214	0.112	-0.110	0.176	0.131	0.122
Characteristic	-0.076	0.983	-0.084	-0.111	0.029	0.274	-0.064	-0.108
Rich	-0.020	-0.214	-0.075	0.970	-0.027	-0.074	0.158	0.681
Heavy	-0.265	0.220	0.912	-0.091	-0.061	0.049	0.424	0.118
Gorgeous	0.252	0.850	-0.293	-0.061	0.101	0.250	-0.157	-0.117
Gentle	0.927	-0.159	0.007	0.050	0.209	-0.004	0.004	0.026
Luxurious	0.393	-0.128	0.831	-0.105	0.079	-0.018	0.375	0.087
Concrete	-0.116	0.885	0.413	0.029	0.007	0.242	0.204	0.093
Traditional	0.975	0.121	0.122	0.136	0.230	0.075	0.075	0.106
Simple	0.405	0.436	-0.430	0.625	0.109	0.132	-0.087	0.349
Regular	-0.799	0.497	-0.027	-0.060	-0.163	0.104	-0.017	-0.044
Artistic	0.874	0.214	-0.097	-0.058	0.216	0.100	-0.068	-0.077
Amazing	-0.621	0.220	-0.549	0.419	-0.135	0.029	-0.175	0.196

TABLE 4: Sample factors of incense burners in the ming dynasty.

Sample number	b ₁	b ₂	b ₃	b ₄	B
M402	1.27531	0.72821	-1.33460	1.05498	0.5698
M6a01	0.54095	-0.54175	1.43287	0.67021	0.4005
M6b01	1.12827	-0.00153	0.52503	-1.63890	0.3006
M204	-0.98950	1.89180	0.34106	-0.36379	0.2341
M102	-0.09300	-0.68950	0.11236	0.46126	-0.1625
M507	-1.13915	-0.41104	0.23024	0.74174	-0.4017
M301	-0.72288	-0.97618	-1.30695	-0.92550	-0.9409

(Gui-shaped incense burner) can be more accepted by the perceptual psychology of the design group, especially the “three-legged incense burner” shape of M402 can be more recognized by designers. However, the scores of comprehensive factors of M102 (Li-type tripod incense burner), M507 (cylindrical tripod incense burner), and M301 (Ding-shaped tripod incense burner) are lower, which indicates that the shape characteristics of incense burners are not the styles expected by the design group in perceptual aesthetics.

3.2. Principal Component Correlation of Incense Burners in the Qing Dynasty. The KMO and Bartlett test of factor analysis showed that KMO was 0.921 which indicated that the obtained data were suitable for factor analysis. Bartlett’s spherical test showed significant P values of $0.000 < 0.05$ which also indicated that the data were suitable for factor analysis, indicating that the questionnaire had structural effect. Four principal components with eigenvalues greater than 1 were extracted from the total variance interpretation (Table 5), and the four eigenvalues were 6.245, 2.353, 1.443, and 1.150, respectively. According to scree plot (Figure 4) analysis, the eigenvalues of common factor 1, common factor 2, common factor 3, and common factor 4 are all greater than 1, indicating that the influence index is relatively large and there are four principal components that have important influence on the shape of censers in the Qing Dynasty.

The variance contribution of the first principal component is 48.038%, the variance contribution of the second principal component is 18.097%, the variance contribution of the third principal component is 11.101%, and the variance contribution of the fourth principal component is 8.849%. After rotating the load, it can be known that the contribution rate of the four principal component variances has changed, but the total cumulative variance contribution rate has not changed, with an arrangement in descending order. The contribution rate of the first principal component variance is 35.473%. The contribution rate of the second principal component variance is 22.497%, the contribution rate of the third principal component variance is 17.976%, and the contribution rate of the fourth principal component variance is 10.138%. Its total cumulative variance contribution is 86.084% (Table 5), which is higher than the standard index of 85%, indicating that these four principal components contain the information contained in all pointers.

Through in-depth calculation of the importance of each perceptual vocabulary to the design of incense burner in the Qing Dynasty, the component matrix of four common factors for perceptual image vocabulary was obtained and the principal components 1, 2, 3, and 4 were set as E_1 , E_2 , E_3 , and E_4 . The component coefficient matrix of four principal components corresponds to each perceptual phrase. Factor scores of E_1 , E_2 , E_3 , and E_4 in each incense burner sample were calculated in SPSS and expressed with b_1 , b_2 , b_3 , and b_4 . Component coefficient scores in equation (2) and Table 6 were used to calculate the comprehensive factor score of the samples, which was denoted by B (Table 7).

$$B = \left(\left(\frac{35.473\%}{86.084\%} \right) \times b_1 + \left(\frac{22.497\%}{86.084\%} \right) \times b_2 + \left(\frac{17.976\%}{86.084\%} \right) \times b_3 + \left(\frac{10.138\%}{86.084\%} \right) \times b_4 \right). \quad (2)$$

In equation (2), b_1 is the first common factor score of the sample; b_2 is the second common factor score of the sample; b_3 is the third common factor score of the sample; and b_4 is the fourth common factor score of the sample.

Rotation matrix analysis showed that “characteristic,” “rich,” “gorgeous,” and “artistic” are closely related to principal component 1; “strange,” “heavy,” and “concrete” are closely related to principal component 2; “amazing” is closely related to principal component 3; and “gentle” and “traditional” are closely related to principal component 4, which are greater than the default extraction standard of 0.6, indicating that they meet the perceptual needs of the design group (Table 7). It indicates the incense burner shapes of Q3a03 (Ding-shaped incense burner with animal handles), Q902 (inscribed wall incense burner), Q3b06 (incense burner in the shape of square Ding), Q3a02 (Ding-shaped tripod incense burner), Q702 (alms-bowl-shaped incense burner), Q6a02 (incense burner with vertical ears), Q3c02 (polyhedral-type incense burner), and Q407 (tall tripod incense burner) can be more accepted by the perceptual psychology of the design group. Especially, Q3a03 (Ding-shaped incense burner with animal handles) incense burner can be more recognized by the design group. However, Q3b01 (incense burner in the shape of square Ding), Q502 (Gui-shaped incense burner), Q201 (Gui-shaped incense burner), Q803 (square-shaped incense burner), Q101 (Li-type tripod incense burner), and Q6c04 (incense burner with ring handles) have lower comprehensive factor scores, indicating that their shape characteristics are not what the design group expects in perceptual aesthetics.

According to the results obtained from the component matrix after the rotation matrix, the incense burner shapes of the tall tripod incense burner, incense burner with vertical ears, and incense burner with animal handles in the Ming Dynasty and the Ding-shaped incense burner with animal handles, inscribed wall incense burner, and incense burner in the shape of square Ding in the Qing Dynasty were accepted by the design group. In terms of incense burner shape characteristics, tall tripod incense burner, Ding-shaped incense burner with animal handles, and incense burner in the shape of square Ding all belong to the incense burner shape with a long proportion of incense burner feet. Ding-shaped tripod incense burner, cylindrical tripod incense burner, and Li-type tripod incense burner in the Ming Dynasty and incense burner with ring handles, Li-type tripod incense burner, and square-shaped incense burner in the Qing Dynasty were rejected by designers. The comprehensive results showed that most of the incense burners with higher acceptance belong to a large proportion of incense burners, while the incense burners with lower acceptance belong to the incense burners with short or no incense feet. “Incense

TABLE 5: Explanation of total variance of incense burners in the Qing Dynasty.

	Total variance explanation								
	Initial eigenvalue of component			Extracting the sum of squares of loads			Sum of squares of rotating loads		
	Total variance	%	Accumulated%	Total variance	%	Accumulated%	Total variance	%	Accumulated%
1	6.245	48.038	48.038	6.245	48.038	48.038	4.611	35.473	35.473
2	2.353	18.097	66.134	2.353	18.097	66.134	2.925	22.497	57.970
3	1.443	11.101	77.235	1.443	11.101	77.235	2.337	17.976	75.947
4	1.150	8.849	86.084	1.150	8.849	86.084	1.318	10.138	86.084
5	0.691	5.313	91.397						
6	0.518	3.981	95.378						
7	0.283	2.180	97.558						
8	0.186	1.430	98.988						
9	0.061	0.471	99.459						
10	0.051	0.395	99.854						
11	0.014	0.109	99.963						
12	0.003	0.022	99.986						
13	0.002	0.014	100.000						

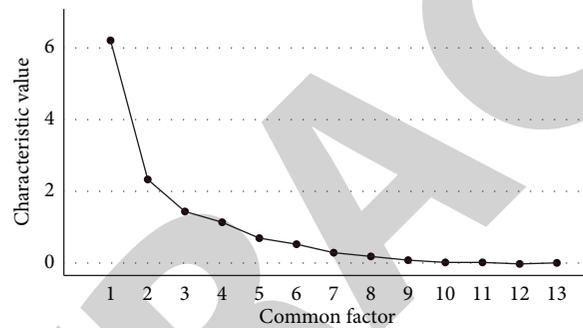


FIGURE 4: Factor analysis of incense burners in the Qing Dynasty gravel map.

TABLE 6: Component matrix and composition score coefficient matrix of censers after rotation in the Qing Dynasty.

	Rotated component matrix				Component score coefficient matrix			
	Component				Component			
	1	2	3	4	E_1	E_2	E_3	E_4
Strange	0.386	0.874	0.121	0.052	-0.044	0.375	-0.119	-0.022
Characteristic	0.949	0.273	0.094	-0.026	0.225	-0.039	-0.021	0.001
Rich	0.946	0.292	0.003	-0.050	0.221	-0.008	-0.074	-0.020
Heavy	0.020	0.899	0.156	0.051	-0.156	0.447	-0.099	-0.043
Gorgeous	0.843	0.130	0.284	0.268	0.231	-0.164	0.114	0.240
Gentle	0.051	0.333	0.284	0.818	-0.009	0.036	0.091	0.610
Luxurious	0.786	0.379	-0.152	-0.161	0.156	0.111	-0.173	-0.124
Concrete	0.313	0.745	0.223	0.140	-0.039	0.289	-0.036	0.056
Traditional	-0.119	-0.197	-0.596	0.676	0.044	-0.029	-0.270	0.533
Simple	-0.403	-0.446	-0.718	0.142	-0.019	-0.037	-0.286	0.127
Regular	-0.278	-0.358	-0.647	-0.020	-0.007	-0.011	-0.269	-0.001
Artistic	0.972	-0.028	0.127	-0.038	0.285	-0.212	0.057	0.022
Amazing	-0.197	-0.016	0.866	0.211	-0.058	-0.170	0.472	0.164

burner foot” appeared to be a characteristic attribute that the design group paid special attention to in perceptual aesthetics, and the design group had a high degree of favor for “considerable.” Theoretical research has showed that the attributes of artifacts constitute human visual aesthetic

experience and have perceptual differences and strong morphological associations between individuals. In the process of people’s cognition of artifacts, the treatment of special shape parts and descriptive semantics determines how to present a part of perceptual aesthetics [39].

TABLE 7: Sample factors of incense burners in the Qing Dynasty.

Sample number	b_1	b_2	b_3	b_4	B
Q3a03	0.68242	0.60728	0.67548	0.90831	0.6880
Q902	0.23002	0.32095	2.00044	-0.47288	0.5406
Q3b06	0.35624	0.46543	0.67200	0.51144	0.4690
Q3a02	0.47644	0.66711	-0.08006	0.95894	0.4669
Q702	0.68874	-0.08793	0.23433	1.00962	0.4287
Q6a02	0.64958	0.53015	-0.58051	0.57706	0.3530
Q3c02	0.54753	0.74535	0.92145	-2.55006	0.3124
Q407	0.72761	-0.00571	-1.09237	0.68502	0.1510
Q3b01	0.63330	0.32102	-1.82842	-1.06727	-0.1626
Q502	0.11062	-2.53479	0.55518	0.33232	-0.4617
Q201	-0.75881	0.12591	-0.99831	-0.65870	-0.5658
Q803	-0.14069	-1.39021	-0.83919	-0.69636	-0.6785
Q101	-2.63087	1.23969	-0.16109	0.52327	-0.7322
Q6c04	-1.57213	-1.00427	0.52109	-0.06070	-0.8086

4. Conclusion

In this study, Kansei Engineering theory was used to explore modern people's perceptual thinking about traditional implements, which is a tentative, cross-disciplinary, and innovative way. Furthermore, this study discussed the perceptual thinking of design groups on traditional artifacts through perceptual engineering. Moreover, the aesthetic intersection of design groups was explored among different groups and different styles of artifacts through descriptive vocabulary. This is a practical application of ancient artifacts in modern design. The results of this investigation showed that there is a correlation between the perceptual aesthetic semantic bias and the shape of the artifacts. It probed into the design group's emphasis on the characteristics of the shape of the artifacts. In addition, it reflected the differences in people's perceptual cognition of the artifacts in different periods. It was also shown that the design group paid more attention to the proportion of "incense burner foot" in incense burner style and preferred the incense burner shape with a longer proportion of "incense burner foot."

Data Availability

The data used in this study are available at request from the corresponding author.

Ethical Approval

The authors confirm that all the research meets ethical guidelines and adheres to the legal requirements of the study country.

Conflicts of Interest

The authors declare no conflicts of interest.

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