The Construction of Cultural Impressions for the Idea of Cultural Products

Po-Hsien Lin[1(✉)] and Mo-Li Yeh[2]

[1] Graduate School of Creative Industry Design, National Taiwan University of Arts, Daguan Road, Banqiao District, New Taipei City 22058, Taiwan
t0l3l@ntua.edu.tw

[2] Graduate School of Product and Media Design, Fo Guang University, Taiwan
No. 160, Linwei Road, Jiaosi, Yilan County 26247, Taiwan
llOlmoli@gmail.com

Abstract. What determines if a product is perceived as a cultural artefact? What impressions of a product result in consumers' impressions of cultural creativity? David Hume in his book *Treatise of Human Nature* claimed the perceptions of the human mind resolved themselves into two distinct kinds, impressions and ideas. He claimed that simple impressions always take precedence over their corresponding ideas. Hume brought up seven fundamental relations between impressions and ideas, (1) Resemblance, (2) Identity, (3) Space and time, (4) Proportions in quantity, (5) Degrees in quality, (6) Contrariety, and (7) Cause and effect. Based on the perspective of Hume's theory of relation, a questionnaire was developed to obtain information required for style analysis in this study. Through the statistical techniques of Multidimensional Scaling (MDS) and Multiple Regression Analysis, this study explored the cultural impressions of 10 prominent Taiwan cultural products selected from the domestic market. The results of the study suggested that Hume's theory of seven fundamental relations could be applied to interpret the connections between impressions and ideas regarding viewers' perception of the cultural features of a product. Of the seven relations, (5) Degrees in quality contributed significant positive weight to a product's cultural feature. The relation (6) Contrariety demonstrated the diversity within all seven relations.

Keywords: Cultural creativity · Cultural product · Impression
Idea

1 Introduction

In recent years, the Taiwanese government has been aggressively promoting culture creative industries. The goal of this policy is to develop a new economic model and better the living environment through attracting consumers with cultural products and aesthetic experiences. Many studies pointed out that designing products which emphasize local features to increase their cultural value has become a significant facet of the design process [4, 9].

How to define cultural products? How to know that a product is perceived as cultural? What impressions of a product resulted in consumers' idea of cultural

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creativity? These questions have become critical in many design competitions, grant-funded projects, and academic arguments. In order to explore how visual experiences were turned into mental ideas, David Hume's theory of connections between impressions and ideas was employed in this study to develop the questionnaire [5]. Based on the perspective of Hume's theory of relation, this study examined the cultural impression of Taiwan modern products. Through an approach of style analysis, 10 prominent Taiwan cultural products were selected from the domestic market as stimuli. The results of the study were expected to reinforce theoretical support for cultural creative design.

2 Research Purpose

Based on the perspective of Hume's theory of relation, this study examined the cultural impression of Taiwan modern products. Through an approach of style analysis, 10 pieces of famous Taiwan cultural products selected from the domestic market as stimuli. The results of the study were expected to reinforce theoretical support for cultural creative design.

3 Literature Review

3.1 An Exploration of the Significance of Culture

In his etymological study, Raymond Williams claimed that the word "culture" is one of the most complicated words in the English language [15]. People usually define culture as "the way of life for an entire society" [3, 7]. This description is simple, easy to understand, and yet ambiguous. In addition to this popular definition, Williams concluded there were another two important aspects of culture. The first is to describe a general process of intellectual, spiritual and aesthetic development. The second is to describe the works and practices of intellectual and especially artistic activity [15]. A more precise depiction of culture is to regard culture as that which deals with the result of the evolutionary process in human civilization based on linguistic, anthropological, and sociological studies [13, 17].

Design scholars have been devoted to researching product semantics since the 80s. Krippendorff and Butter claimed that conventional semantics focused on the interrelationship between sigh, referent and thought, emphasizing linguistic expression; product semantics, on the other hand, regards a product as a symbol system. They suggested that a product designer should investigate the symbolic qualities of a product from the perspectives of its operation and application [6]. To sum up, culture generally refers to styles of human activity and the symbolic structures involving ideologies, languages, customs, religions, arts, and behaviors [16].

3.2 An Exploration of Human Perception of Impressions and Ideas

Over the past decades, many scholars have been devoted to the study of cultural creative design models. Leong and Clark suggest a brief framework for investigating cultural product design, dividing it into three space structures: the external concrete tactile level, middle behavioral level and the inner invisible spiritual level [7].

Norman presents in his book "Emotional Design" three levels of emotional design-visceral, behavioral and reflective. The visceral level involves direct sensations when in touch with a product, including shape, style, tactile impression, material and weight. The behavioral level is non-conscious, including the pleasure after exercise, or the delight after a shower. The reflective level represents conscious behaviors such as the pop culture or style and tastes [12]. Hsu et al. expand the three levels, offering a more detailed explication, and provide a cultural creative design model which could further facilitate comparison, application and thinking for design (Fig. 1) [4].

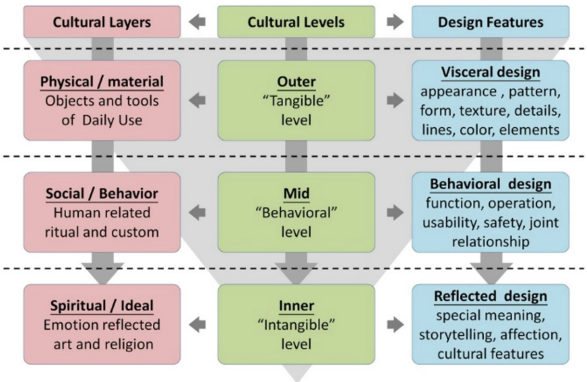

Fig. 1. Three layers of cultural creative design model [4]

This theoretical framework has been put into practice in some projects, for example, in a study entitled *Applying Sakizaya Tribe*'s *Palamal (the Fire God Ritual) into Cultural Creative Products Design*, the design model was employed to create seven pieces of cultural product. The outcome of the study showed that the products were generally appreciated by the reviewers though there were some preference differences between tribal members and the general public [8]. The result of the survey indicated that the reviewers confirmed the application of cultural elements in the product design was successful. However, no further information was revealed on how a product demonstrated its cultural features. To answer this question requires a return to the original inquiry—what makes a product look cultural?

Hill in his book *Meaning, Mind, and Knowledge* discussed the topic of the philosophy of mind. He used the idea of "visual qualia" to explain human visual experience of observing an object [2]. According to Hill, perceptual qualia are the ways that things look, seem, and appear to conscious observers. He further divided visual qualia into two distinctions. The first is "phenomenological sense" expressing how an object

looks to an observer. The second is "epistemic sense" which expresses how the observer's current visual experience provides adequate evidential support for the belief that the object looks like [1, 2].

How to turn a sensational experience into conceptual idea is not only the topic for contemporary psychology and Cognitive Science, it is also an important philosophical issue in human history. According to David Hume, a famous Scottish philosopher known for his highly influential philosophical empiricism, all the perceptions of the human mind resolved themselves into two distinct kinds, which were called impressions and ideas [5]. He claimed that the simple impressions always take precedence over their correspondent ideas. In his book *Treatise of Human Nature*, Hume brought up seven fundamental relations between ideas including (1) Resemblance, (2) Cause and effect, (3) Space and time, (4) Identity, (5) Contrariety, (6) Proportions in quantity, and (7) Degrees in quality [5] (Fig. 2).

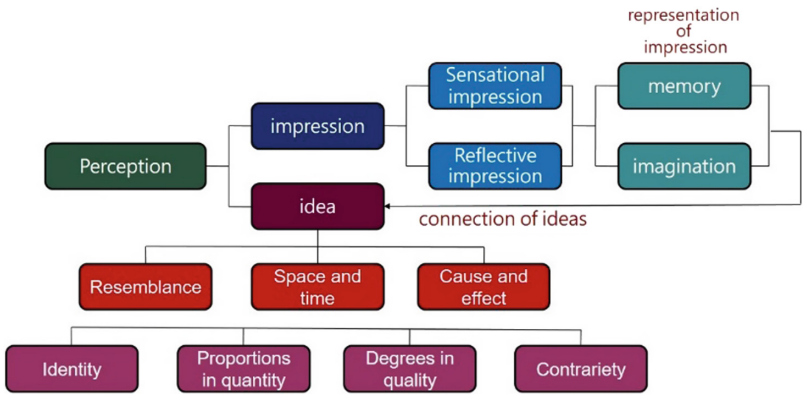

Fig. 2. David Hume's theoretical framework of relations between impressions and ideas

4 Research Methodology

4.1 Research Process

This study intends to explore the cultural impression of Taiwan's modern products. Based on the perspective of Hume's theory of relation. An online questionnaire was developed to examine the 10 pieces of famous Taiwan cultural products selected from the domestic market.

After obtaining the data required for style analysis, this study employed "Multidimensional Scaling" (MDS). MDS is usually used to classify observational values, and is a data analysis method for determining whether a potential structure exists in the data [14]. A statistical technique of Multiple Regression Analysis was employed to explore the significance of these relations in cultural features of the works.

4.2 Research Instrument

Through the five-point scale composing Hume's seven fundamental relations between idea and impression, this study developed a questionnaire to examine participants' reactions to 10 pieces of selected products. Three additional questions were designed to evaluate their opinions about the degree of cultural feature and creativity demonstrated in the product, and the preference of the product (Table 1).

Table 1. The five-point scale of the questionnaire

items	descriptions	5	4	3	2	1
Resemblance	Function or form is similar					
Identity	Function or form is identical					
Space and time	Time sequence or space composition is related					
Proportions in quantity	Evoke association from proportion					
Degrees in quality	Evoke association from style or taste					
Contrariety	Evoke opposite or ironic association					
Cause and effect	Evoke association from causal relationship					
Degree of cultural feature demonstrated in the product						
Degree of creativity demonstrated in the product						
Preference of the product						

4.3 Research Stimuli

As for the selection process of the research object, the products were chosen from two selection stages. The first stage was to collect through an online inquiry the top 20 items recommended by the students and teachers of design departments of the universities in Taiwan. The second stage was to select 10 pieces of representative products from the 20 items in the first stage through the same approach (Table 2).

5 Research Results and Data Analysis

5.1 Analysis of Integrated Impression of the Products

This study analyzed participants' impression towards the products. They evaluated each piece on the degree of cultural feature and creativity demonstrated in the product. The mean scores and the rank of 10 products were shown in Tables 3 and 4. A Preference was designed for evaluating overall impression of the product. The outcome was shown in Table 5.

The Kendall's coefficient of concordance was employed to examine whether the 10 selected products were ranked consistently in three domains of evaluation. The calculated outcome $W = .004$ suggested that there was no significant consistency. However, the ranking of p3, p4, and p7 constantly appeared in the top three.

Table 2. Titles and codes of 10 representative works of the study

p1	p2	p3	p4	p5
				
Paper Tape by National Palace Museum	*Four Divine Beasts Cups* by National Taiwan University of Arts	*Bamboo Chair* by National Taiwan Craft R&D Institute	*Ceramic Steamer* by JIA Inc.	*Pineapple Cake* by Sunnyhills Inc.

p6	p7	p8	p9	p10
				
Porcelain Tableware by Franz Inc.	*Ceramic Dumpling Seasoning Set* by Hakka-blue Studio	*Rice Wine* by Sinyi Township Farmers' Association	*Mandarin Lemon Squeezer* by Alessi S. P. A.	*Wooden Toys* by Mufun Design Studio

Table 3. The ranking of the degree of cultural feature

Rank	1	2	3	4	5	6	7	8	9	10
No	p4	p7	p3	p10	p2	p9	p6	p5	p1	p8
Products										
Mean Scores	4.01	3.97	3.89	3.67	3.44	3.43	3.33	3.27	3.22	3.01

5.2 Style Analysis of the Products

A matrix was created from the raw data to illustrate the mean scores of the seven fundamental relations in each of the 10 products as shown in Table 6. The matrix allowed SPSS statistics software to compute MDS and generate a two-dimensional

Table 4. The ranking of the degree of creativity

Rank	1	2	3	4	5	6	7	8	9	10
No	p7	p4	p3	p10	p9	p1	p6	p2	p5	p8
Products										
Mean Scores	4.24	4.16	4.11	3.93	3.83	3.67	3.46	3.34	3.24	2.89

Table 5. The ranking of the preference

Rank	1	2	3	4	5	6	7	7	9	10
No	p4	p3	p7	p10	p1	p5	p6	p9	p2	p8
Products										
Mean Scores	4.19	4.17	4.16	3.84	3.60	3.49	3.36	3.36	3.23	2.79

(2D) spatial plot demonstrating the relationship between two crucial correspondence indices. The Kruskal's stress was .09254, which was less than 0.1 and the determination coefficient (RSQ) was .97650, which was close to 1.0, indicating that the spatial relationships between the 10 products and seven fundamental relations could be appropriately represented in 2D. The stress index indicated that the 2D plot and the original data exhibited a satisfactory fit; the RSQ indicated that the 2D plot was capable of explaining 97.65% of the variance [11].

Another important information is OD distances in a MSD plot. On the coordinate plane, each point of the observed products has an orthogonal projection on the vectors. The formula for calculating OD distance is shown in Fig. 3. The value of b2/b1 is the slope of vector. The vector projection of D onto the origin O demonstrates the characteristic strength, of which the vector contributes to the product (Fig. 4).

Table 7 shows the values of OD distance in the vectors of seven fundamental relations for each of the 10 products. Taking Resemblance (f1) as example, the OD distance of p4 was 1.84, demonstrating the greatest strength in all products. According to the OD distance in each vector of the fundamental relations, the *Ceramic Steamer* (p4) surpassed the other products in f1, f2, f3, f5, and f7. The *Ceramic Dumpling Seasoning Set* (p7) took the lead in f4. The *Paper Tape* (f1) exceeded the other products in f6.

An exploratory factor analysis (EFA) was conducted to search for latent variables within seven fundamental relations. Two factors were extracted with eigenvalues greater than 1.0 and total variance explained 82.641 as shown in Table 8. The first

Table 6. Mean scores of the seven fundamental relations in each of the 10 products

		 p1	 p2	 p3	 p4	 p5	 p6	 p7	 p8	 p9	 p10
Resemblance	f1	3.76	3.13	3.91	4.37	3.13	3.77	4.24	3.04	3.63	3.81
Identity	f2	3.14	3.03	3.71	4.11	3.00	3.64	3.97	3.03	3.37	3.61
Space and time	f3	3.21	3.01	3.47	3.41	2.80	3.01	3.34	2.77	3.24	3.27
Proportions in quantity	f4	2.63	3.21	3.30	3.16	2.66	3.10	3.57	2.53	2.79	3.51
Degrees in quality	f5	3.89	3.63	4.24	4.11	3.34	3.81	4.17	3.07	3.40	3.77
Contrariety	f6	2.63	2.09	2.27	2.14	2.13	2.04	2.28	2.20	2.51	2.33
Cause and effect	f7	3.01	2.91	3.23	3.37	3.26	2.97	3.27	2.96	3.14	3.34

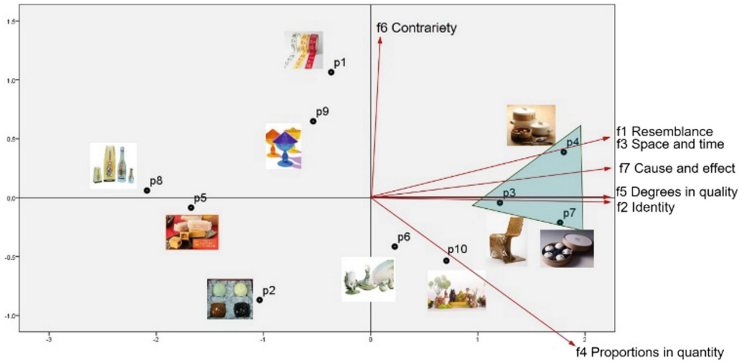

Fig. 3. Cognitive space distribution of the 10 products and seven fundamental relations

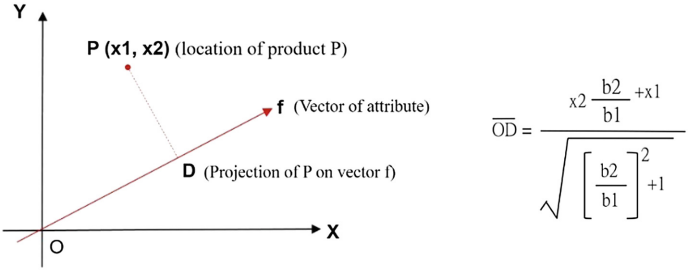

Fig. 4. Cognitive space distribution of the 10 products and seven fundamental relations

Table 7. OD distances in the vectors of seven relations for each of the 10 products

											
		p1	p2	p3	p4	p5	p6	p7	p8	p9	p10
Resemblance	f1	-0.10	-1.22	1.16	1.84	-1.65	0.12	1.66	-2.01	-0.36	0.55
Identity	f2	-0.38	-1.03	1.21	1.80	-1.67	0.23	1.77	-2.09	-0.54	0.71
Space and time	f3	-0.09	-1.22	1.16	1.84	-1.64	0.11	1.66	-2.01	-0.36	0.55
Proportions in quantity	f4	-0.92	-0.33	1.00	1.23	-1.30	0.43	1.55	-1.72	-0.82	0.89
Degrees in quality	f5	-0.36	-1.04	1.20	1.80	-1.68	0.22	1.76	-2.09	-0.53	0.70
Contrariety	f6	1.04	-0.92	0.02	0.48	-0.18	-0.40	-0.12	-0.05	0.62	-0.50
Cause and effect	f7	-0.24	-1.13	1.19	1.83	-1.67	0.18	1.73	-2.07	-0.46	0.64

dimension included six items of fundamental relations except Contrariety (f6), which was also the only item in the second dimension.

The most prominent product and its mean score in each fundamental relation was also listed in Table 8. In the first dimension, the *Ceramic Steamer* (p4) surpassed the other products in f1, f2, and f7; the *Ceramic Dumpling Seasoning Set* (p7) took the lead in f4 and f5; and the *Bamboo Chair* (p3) exceeded the other products in f3. In the second dimension, the *Paper Tape* (p1) was the most prominent product in f6.

Table 8. Factor analysis of seven fundamental relations

Fundamental Relations	Factor Loading		Prominent Products	Mean Scores
	Factor1	Factor2		
Resemblance (f1)	.943	.170	p4	4.37
Identity (f2)	.942	-.125	p4	4.11
Degrees in quality (f5)	.904	.031	P7	4.17
Space and time (f3)	.902	.342	P3	3.47
Proportions in quantity (f4)	.798	-.352	p7	3.57
Cause and effect (f7)	.698	.039	p4	3.37
Contrariety (f6)	.041	.982	p1	2.63
Eigenvalues	4.532	1.253		
% of Variance	64.746	17.895		
Cumulative %	64.746	82.641		

5.3 Seven Fundamental Relations to Predict Degree of Cultural Feature

To explore how seven fundamental relations affected the cultural feature when reviewing the products, this study further selected the top three products to conduct multiple regression analyses, taking seven fundamental relations as independent

variables and the participant's impression of cultural feature on the product as a dependent variable. The following are the results of the three examined products (Tables 8, 9 and 10).

Table 9. Multiple regression analyses with fundamental relations as the dependent variable (p3)

Products	Predictor Variables	B	r	β	t
 *Bamboo Chair* (p3)	f1	.063	.354**	.072	.516
	f2	.160	.415***	.195	1.298
	f3	.054	.319**	.063	.407
	f4	-.094	.279*	-.137	-.849
	f5	.261	.352**	.229	2.020*
	f6	.211	.439***	.333	2.334*
	f7	.011	.327**	.017	.126
	R=.566		R^2=.320	F=4.177**	

*p <0.05 **p <0.01 ***p <0.001

Table 10. Multiple regression analyses with fundamental relations as the dependent variable (p4)

Products	Predictor Variables	B	r	β	t
 *Ceramic Steamer* (p4)	f1	.322	.427***	.302	2.030*
	f2	.021	.388***	.022	.146
	f3	.001	.268*	.001	.009
	f4	.089	.221*	.152	.910
	f5	.246	.412***	.258	2.170*
	f6	-.016	.078	-.025	-.189
	f7	.085	.289**	.140	.926
	R=.563		R^2=.317	F=4.107**	

*p <0.05 **p <0.01 ***p <0.001

In the product of the *Bamboo Chair*, the multiple regression model with all seven predictors produced R^2 = .320, F = 4.177, suggesting a statistically significant association between independent variables and the dependent variable ($p < .01$). As can be seen in Table 8, f5 and f6 scales had significant positive regression weights, indicating the product with higher scores on the f5 (Degrees in quality) and f6 (Contrariety) was expected to have the strongest cultural impression.

In the product of the *Ceramic Steamer*, the multiple regression model with all seven predictors produced R^2 = .317, F = 4.107, suggesting a statistically significant association between independent variables and the dependent variable ($p < .01$). As can be seen in Table 9, f1 and f5 scales had significant positive regression weights, indicating the product with higher scores on the f1 (Resemblance) and f5 (Degrees in quality) was expected to have the strongest cultural impression (Table 11).

Table 11. Multiple regression analyses with fundamental relations as the dependent variable (p7)

Products	Predictor Variables	B	r	β	t
 *Ceramic Dumpling Seasoning Set* (p7)	f1	.069	.277*	.078	.575
	f2	.063	.240*	.079	.607
	f3	.125	.288**	.180	1.165
	f4	.043	.252*	.048	.344
	f5	.331	.438***	.347	2.621*
	f6	.055	.089	.086	.682
	f7	-.095	.117	-.133	-.916
	R=.499		R^2=.249	F=2.933*	

*p <0.05 **p <0.01 ***p <0.001

In the product of the *Ceramic Dumpling Seasoning Set*, the multiple regression model with all seven predictors produced R^2 = .249, F = 2.933, suggesting a statistically significant association between independent variables and the dependent variable ($p < .05$). As can be seen in Table 10, f5 scales had significant positive regression weight, indicating the product with higher scores on the f5 (Degrees in quality) was expected to have the strongest cultural impression.

6 Conclusion and Recommendations

6.1 Discussion of Findings

This study used the perspective of Hume's theory on the connection between impression and idea to examine the how customers perceived the cultural impression of a cultural product. Discussed below are some important findings:

1. Through an integrated evaluation on cultural feature, creative, and preference of the 10 selected products, though there was no significant correlation of the ranking within, three products including the *Bamboo Chair* (p3), the *Ceramic Steamer* (p4), and the *Ceramic Dumpling Seasoning Set* (p7) were jointly ranked as the top three prominences out of all the products. As shown in the cognitive space illustrated by the MDS plot, these three products spread collectively along the positive side of the

x-axis, the same direction of the vectors of Hume's six relations of Resemblance (f1), Identity (f2), Space and time (f3), Proportions in quantity (p4), Degrees in quality (p5), and Cause and effect (f7). This outcome suggested the perception of cultural feature could be linked to most of Hume's theoretical relations.

2. Through factor analysis, one of Hume's relations of Contrariety (f6) was categorized as a unique factor, separated from another factor wherein the other six relations were grouped together. By checking the MDS plot, the distribution of vector f6 and the other vectors was orthogonal, suggesting the diversity of Contrariety within all seven relations.
3. Through Multiple Regression Analysis, this study employed participants' perception of Hume's seven fundamental relations to predict their cultural impressions when reviewing a cultural product. The results of the study suggested that Hume's theory of seven fundamental relations could be applied to interpret the connections between impressions and ideas regarding viewers' perception of cultural features in a product. Among the seven relations, Degrees in quality (f5) contributed significant positive weight to a product's cultural feature. By checking the MDS plot, the vectors f5 and f6 were at right angles to each other, suggesting that the relation of Contrariety did not correlate with Degrees in quality and was statistically independent of the other relations.

6.2 Conclusion

This study attempted to employ David Hume's theory to explore the possible connection between reviewers' impression and idea, trying to answer how a product was perceived as cultural and what impressions of a product resulted in consumers' idea of cultural features. The theoretical framework of this study was derived from a traditional philosophic conception proposed in the eighteenth century. While conventional theory could be attractive, however, there are plenty of modern theories of cognitive psychology and neuroscience which could support the related investigations. From this point of view, the motif of this study is nostalgic rather than scientific. However, this study manifested humanist concerns for cultural issues by using an empirical approach to reiterate early philosophers' articulation about their achievement on the development of human spiritual civilization.

6.3 Further Research and Recommendations

6.3.1 Extension of Theoretical Sustains

As mentioned in literatures review, Christopher S. Hill used the idea of "visual qualia" to explain human visual experience of observing an object and divided visual qualia into two distinctions of "phenomenological sense" and "epistemic sense". Future research is recommended to apply Hill's theory to expand and deepen the theoretical framework of the study.

6.3.2 Derivation of Interdisciplinary Research

In this study, participants were invited to express their perceptions of the cultural products through subjective visual experience. The application of modern theories of cognitive psychology and neuroscience is suggested for further study.

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