

APPLICATION OF INNOVATIVE OXYMORONS IN PRODUCT DESIGN

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Abstract

Oxymoron is a method that makes effect by using a pair of antithetic elements, and accordingly brings some unexpected, fascinating impressions. This study aimed to analyze the composition of the type of oxymoron, and trying to construct an innovative oxymoron which could apply into design. The study is separated into four phases: (1) First of all, collect the oxymoron example sentences, analysis the composition types and construct innovation oxymoron; (2) Secondly, the example sentences are corresponded to a list the attributes which is corresponded to the speech law. And then we got to the sentences describing products using oxymoron. We then convert the sentences into design transform methods; (3) we use the design transform methods to design lighting product. The study investigates the correspondence between samples of innovative oxymoron and contradictory image respectively, and influence of the image on the comprehensive evaluation. The main results are summarized below: (1) Analyze the composition of the type of oxymoron, then summarize the three oxymoron composition modes; (2) The use of innovative oxymoron, along with the corresponding property law, we come up with 12 design techniques; (3) The constituent reason of contradictory image of the sample of innovative oxymoron is compose with three factors, they are as follows: the constituent reason of “overall feeling of product use” are “novelty -boring”, “mildly -direct”, “exciting-plain”.

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The effect of degree of preference of image of contradictory, “difference -coordination”, “surprised -predictable” are obvious.

Keywords: Oxymoron, Dialectics, Attribute listing, Product Using Process

Introduction

In current diverse design methods, contradicting designs can create a sense of contradiction in product use and evoke a sense of innovation and desire in users to enjoy investigating a product. For example, Renate Vos created a series of concrete pendant lights (Concrete Bin) that renovated. In research on oxymorons in product design, contradiction is the phenomenon of two conflicting elements affecting the development of things at a specific time. In other words, an oxymoron refers to the combination of contradicting terms that arouse surprise and stimulate interest. Because an oxymoron can convey new content and serve as a modifier, this study analyzed compositions of oxymorons and developed oxymoron composition models to convert new oxymorons into possible product designs.

This study analyzed and modeled oxymoron compositions before developing innovative oxymorons from the models. Existing methods of design transformation were then modified. Results from applying the principal component analysis to test a contradictory image were used to construct principal component dimensions and comprehensive evaluations of a contradictory image as well as to explore diverse applications and development possibilities of innovative oxymoron composition models in product design.

Concrete research objectives are listed as follows:

1. Summarize oxymoron composition models and develop a new oxymoron.
2. List attributes that correspond to parts of speech to develop design-conversion models.
3. Explore the relationship between design examples and contradictory images as well as comprehensive evaluation.

Literature Review

Oxymoron

An oxymoron describes a concept using two inharmonious or opposite phrases to strengthen the expressed meaning. An oxymoron generally has surprising and intriguing effects. This section explores the components and connotations of oxymorons to summarize and organize their relevant applications and uses. Georg W. F. Hegel (1770–1831) stated that “everything is inherently contradictory.” He believed any concept has factors that contradict it. Hegel argued that the inherent contradictions in all things compete to promote positive development. Laozi stated in Tao Te Ching that “Void and Amplitude have the same origin; Difficulty and Ease beget each other.” Opposite things not only spawn each other but are mutually inclusive. Materialist philosopher Karl Marx (1818–1883) asserted that

“all things are contradictory in themselves. The world is an aggregation of contradictions. Things or the world cannot develop without contradictions.” Marx incorporated Hegel’s thoughts and believed that everything exists as a unity of contradictions, thereby suggesting the generalizability of contradiction. Contradictions subsist in the development of all things. Oxymorons are common in literature. The combination of two terms with opposite meanings guides readers

to consider the connotation of the contradiction. For example, the phrase “beautiful mistake” in a poem by Cheng Chou-yu (1974) expresses the mutual entanglement of the two terms, thereby forming a new image during conversion. Therefore, this expression is innovative for conveying ideas that are indescribable by using known language and deepening people’s thinking.

Table 1. “Beautiful Mistake” oxymorons

Sentence	Difference	Relation	Effect
Beautiful Mistake	"Beautiful" gives a pleasant and positive image; "Mistake" gives a heavy and negative image	“Beautiful” is an adjective that modifies a noun “Mistake”	The images of "Beautiful" and "Mistake" conflict with each other, thus producing an attractive effect

Relationship Between Product Design and Hegel’s Three-Stage Dialectics

In the Design Application of Temporal Opposite Image, Huang (2012) used sarcasm and exaggeration to convey temporal contradictions of products. Examples of “contradictory hesitation in use due to product functions” evoked a perception of “directness,” which provided a sense of innovation. In a study on the design applications of oxymorons in product use, Tsai (2014) analyzed the product-use process using the thesis, antithesis, and synthesis dialectic. The thesis stage involved initial contact with the product, the antithesis stage involved making users feel contradictions, and the synthesis stage prompted reflection,

enlightenment, and other emotions in individuals. The effects of the three stages were generated in stages.

During the product-use process, the influences of the thesis, antithesis, and synthesis may occur simultaneously or develop in different sequences. Because this study applied the three stages of Hegel’s dialectic to product design for decomposition and transformation, the meanings of thesis, antithesis, and synthesis were clarified as follows: Thesis represented the product appearance and functional design. Antithesis represented the cut-in point for contradiction design. By analyzing users’ understanding of the product meaning and development of interest and enjoyment in the product, the design entered the synthesis stage.



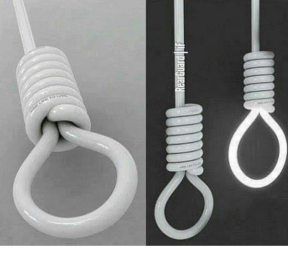
Materials and Methods

Oxymoron Analysis and Construction

First, oxymoron composition models were established. Oxymoronic phrases were collected from various fields such as art and literature. Furthermore, classification according to Chinese parts of speech suggested similar composition patterns among the phrases. After initial summarization and compilation, the oxymoron composition model

was roughly divided into the following three categories according to parts of speech and three types of modifier: adjectives, abstract nouns, and adverbs. Subsequently, composition patterns in the parts of speech were explored, and oxymoron guidance steps were established as the basis for the subsequent generation of oxymoron keywords. The oxymoron composition models are presented as follows:

Table 2. Oxymoron lamp design

Name	Light Drop	Balloon Lamp	Hangman lamp
Appearance			

Design Transformation of Oxymoron Applications in Product Use

First, oxymoronic semantic elements were incorporated into product design. After the three elements of oxymoron composition were combined with product-use behavior, product-use attributes were matched to parts of speech

by using product attribute definitions. During attribute listing, adverbs did not have a corresponding attribute. Because adverbs function similarly to adjectives by modifying subsequent terms, adverbs were included in the adjective attribute. The incorporated product attributes classification is presented as follows.

Table 3. The incorporated product attributes classification

	Product's Properties	Specific
Noun Attributes	Overall Appearance	The Bottle
	Partial Appearance	Boor Handle

	Material	Stainless Steel
Adjective Attributes and Adverb Attributes	Properties	Color, Shape
	Condition	Clean
Verb Attributes	Function	Rotate

Next, oxymoron construction developed in two phases. In the first phase, the three elements of oxymoron composition, namely difference, association, and interaction, were employed to decompose ideas. Difference refers to analyzing the opposite of a given term. Association refers to analyzing corresponding attributes of each term. Interaction involves exploring and describing the perceptual effect of the term on people. In the second phase, the three elements were converted into product-use characteristics. According to the opposite term

in the oxymoron, “difference” described product-use characteristics. In “association,” the attribute of a given term was identified and classified to the noun, adjective, or verb category for transformation. In “interaction,” the perceptual effect of the oxymoron on people was transformed into the impression of product use on people. Finally, the difference, association, and interaction elements in product use were combined to develop a design-transformation definition.

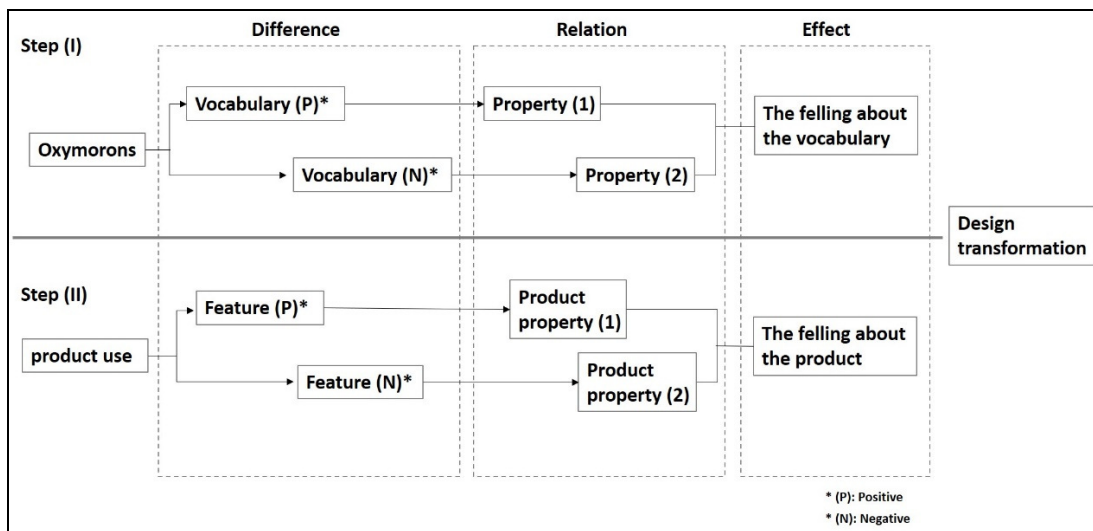


Figure 1. Oxymoron design-transformation mode

Effect of Innovative Oxymorons on Contradictory Image


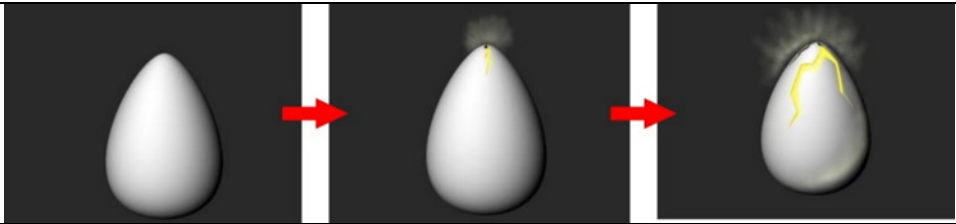

According to the 12 new oxymoron sentence samples summarized in the

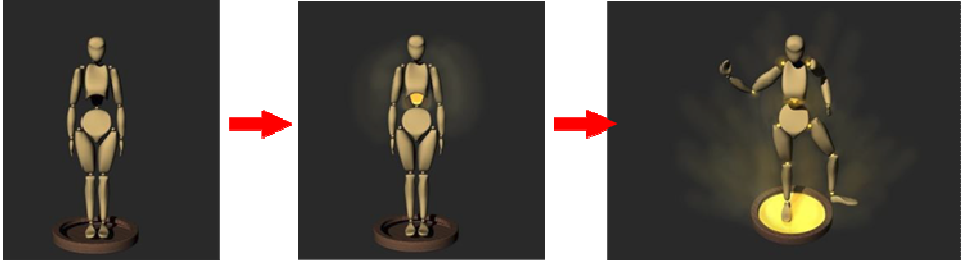



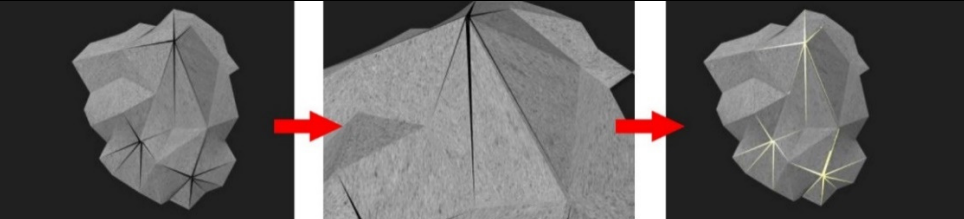
previous section, design examples were created according to the established design-transformation model. Then, contradictory-image-modifier settings were implemented for overall perceptions of

use, operating method, and product feedback. A semantic differential method was employed to test contradictory images to explore the following four items: (a) the contradictory-image composition of innovative oxymoron samples, (b) the relationship between the characteristics and contradictory images of each sample cluster in overall percep-

tions of use, (c) the relationship between three oxymoron composition model characteristics and contradictory images in overall perceptions of use, and (d) the effect of contradictory images on comprehensive evaluation scales of “innovative–harmonious” and “like–dislike” in overall perceptions of use.

Table 4. 12 experimental samples

No.	The experimental samples
01	Design concept : Warm snow
	
02	Design concept : Warm collapse
	
03	Design concept : Warm silence
	
04	Design concept : Warm Body

	
	Design concept : Hope despair
05	
	Design concept : Hope desert
06	
	Design concept : Hope poison
07	
	Design concept : Hope permafrost
08	
09	Design concept : Comfily scream

	Design concept : Comfily fight
10	
	Design concept : Comfily escape
11	
	Design concept : Comfily vomit
12	

Result

Composition of Contradictory-Image in Innovative Oxymoron Examples

This stage involved principal component analyses of the contradictory-image testing results of overall percep-

tions of use, operating method, and product feedback to explore the composition of contradictory-image in innovative oxymoron samples. The analysis involved extraction of three principal components. The principal component analysis results of the three components are compiled as follows

1. Contradictory-image component of overall perceptions of use:

Table 5. Principal component analysis results

Adjective pair	Principal components		
	Principal components 1	Principal components 2	Principal components 3
Amazing- predictable	0.946	0.237	0.385
Surreal- logical	0.918	0.479	0.511
Vexed- steadfast	0.805	0.173	0.329
Hesitant- unshaken	0.572	0.274	0.177
Troublesome- convenient	-0.127	0.901	0.328
Opposite- similar	0.480	0.752	-0.213
Different- coordinating	0.559	0.739	0.262
Roundabout- direct	0.490	0.733	0.197
Multivariate- single	-0.0175	0.237	0.902
Striking- latent	0.126	-0.279	0.829
Dramatic- featureless	0.241	0.225	0.843
Eigenvalue	5.879	2.370	1.189
Explanation rate (%)	53.448	21.549	10.813
Cumulative explanation rate (%)	53.448	74.996	85.809

2. Contradictory-image component of operating method:

Table 6. Principal component analysis results

Adjective pair	Principal components		
	Principal components 1	Principal components 2	Principal components 3
Amazing- predictable	0.923	0.112	0.280
Surreal- logical	0.832	0.352	0.156
Hesitant- unshaken	0.709	0.421	-0.219
Troublesome- convenient	0.375	0.868	0.119
Multivariate- single	0.116	0.859	0.387
Roundabout- direct	0.240	0.821	-0.411
Striking- latent	0.292	0.382	0.891
Opposite- similar	0.458	0.116	-0.815
Dramatic- featureless	0.621	0.188	0.699
Eigenvalue	4.242	2.318	1.189
Explanation rate (%)	47.131	25.754	10.813
Cumulative explanation rate (%)	47.131	72.885	85.809

3. Contradictory-image component of product feedback:

Table 7. Principal component analysis results

Adjective pair	Principal components		
	Principal components 1	Principal components 2	Principal components 3
Hesitant- unshaken	0.896	0.329	0.026
Vexed- steadfast	0.853	0.117	-0.236
Roundabout- direct	0.844	0.458	0.061
Troublesome- convenient	0.825	0.499	0.127
Amazing- predictable	-0.175	0.936	0.298
Surreal- logical	0.348	0.894	-0.175
Opposite- similar	0.403	0.650	-0.538
Multivariate- single	0.656	-0.300	0.880
Dramatic- featureless	-0.133	0.394	0.819
Eigenvalue	4.294	2.111	1.525
Explanation rate (%)	47.716	23.453	16.940
Cumulative explanation rate (%)	47.716	71.169	88.109

Relationship Between Characteristics and Contradictory Images of Oxymoron Composition Models

Scores from the principal component analyses were used to perform Ward's minimum-variance method to obtain three clusters of samples as follows in Figure 2.

To determine the three oxymoron composition models corresponding to innovative oxymoron samples, the relationship between overall perceptions of use and contradictory image was identified by distributing principal component scores in image spaces formed by three principal axes. Then, the scores were converted into corresponding oxymoron composition models.

The principal component scores of each sample were distributed on the image space formed by three principal

component axes. The cluster analysis results of the samples were divided into three clusters.

Overall, a rightward skew represented a greater sense of enjoyment and novelty in overall perceptions of use. When the sample yielded greater perceived variance regarding product appearance before and after use, people had a sense of novelty. By contrast, when the sample yielded little difference in overall perceptions before and after product use and when the operating method was monotonous, people had a sense of tediousness.

The first and second principal components (Fig.3) revealed that examples lower in the image space coordinate system exhibited simple and direct processes in overall use and provided no other possibilities for change; therefore, users felt a sense of directness.

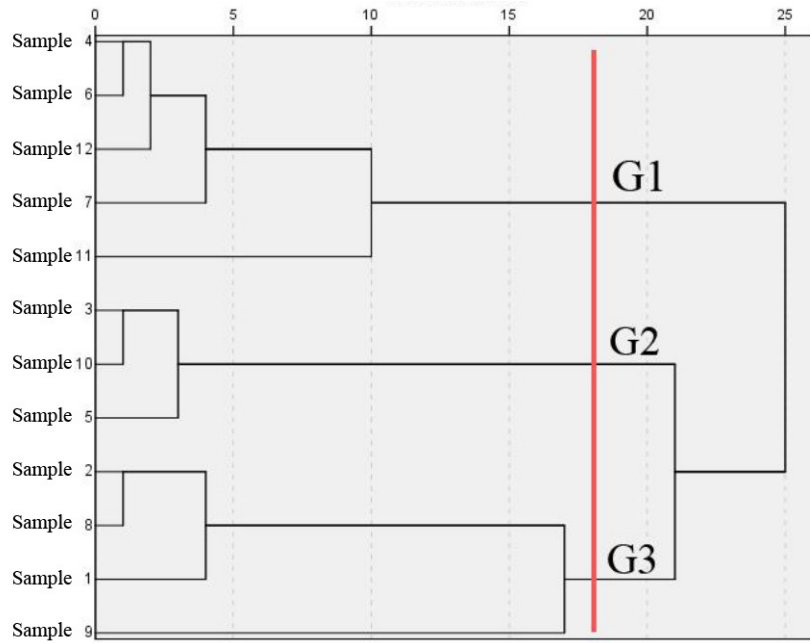


Figure 2. Cluster analysis

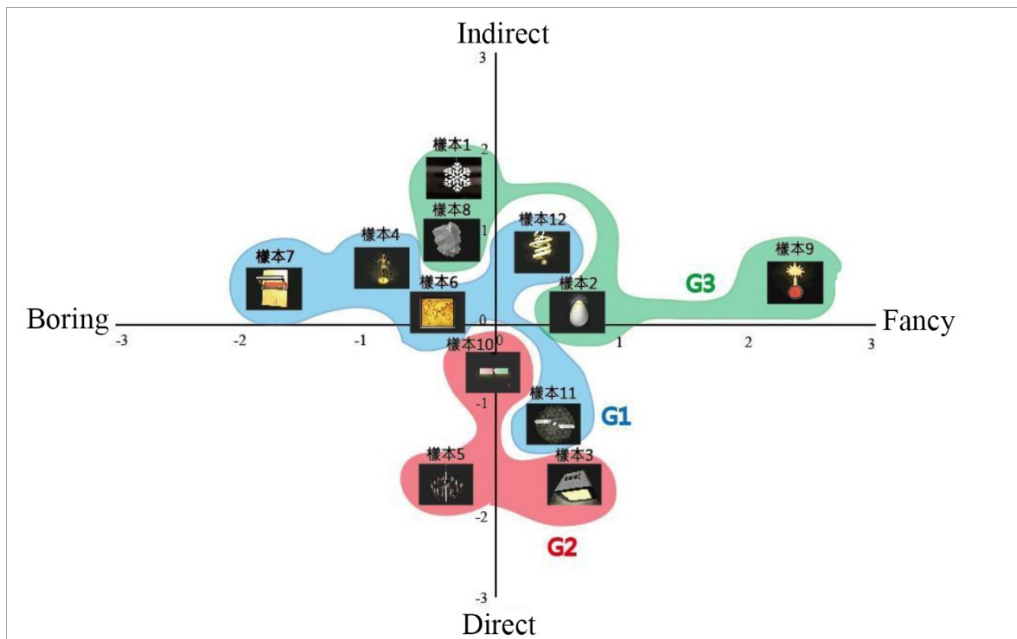


Figure 3. The first and second principal components

The first and third principal components (Fig. 4) revealed that examples higher in the image space coordinate system use methods that aroused anticipation of the results of using the product and expectations of variations by inter-

acting with the product, thereby producing a sense of anticipation. By contrast, when the overall operating method of the sample was monotonous, repeated use reduced the sense of novelty, thereby producing a sense of dullness.

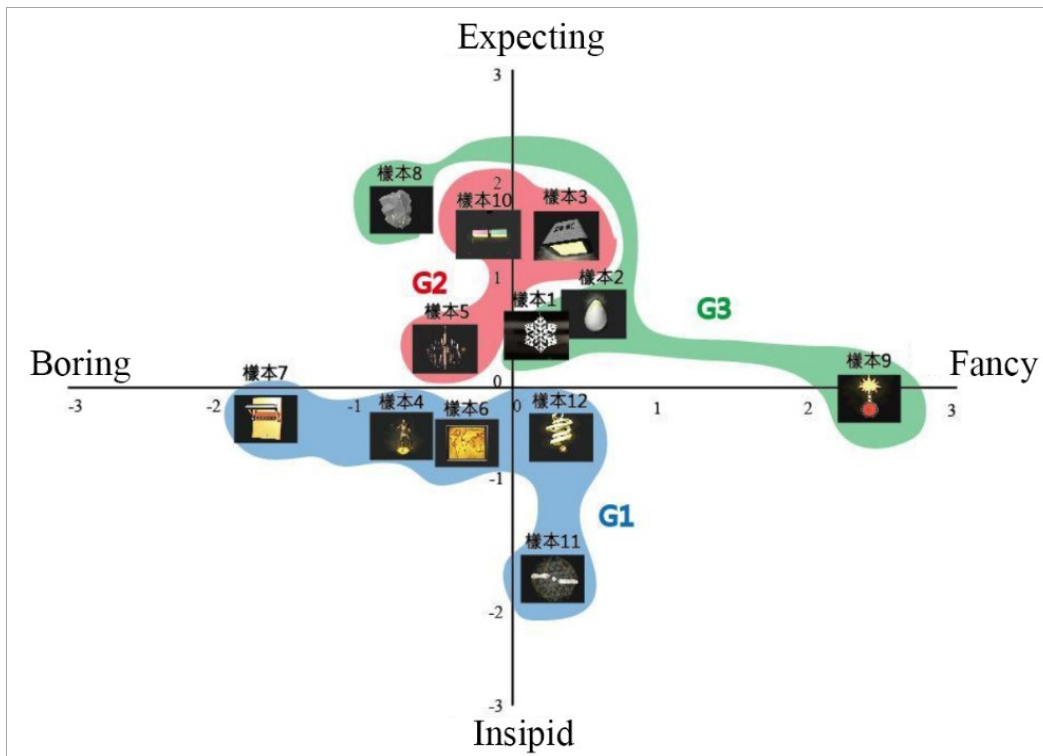


Figure 4. The first and third principal components

Discussion

Effect of Contradictory Images on Comprehensive Evaluation of Innovativeness

To explore the images that affect innovativeness of examples in use, the “innovative–ordinary” scale was used as a dependent variable, and the other 11 image evaluations were used as independent variables to perform a linear re-

gression analysis. The importance of the effect of each image variable on the comprehensive evaluation was determined on the basis of the beta coefficient presented as follows:

The results (Tab. 8) indicated that scales that affect the comprehensive “innovative–ordinary” evaluation were “surreal–logical” and “attractive–concealed.” In other words, if a design makes users feel that the design has shed its old image, exhibits diversity, and

Table 8. Regression Analysis Results

Image word pair	Unstandardized Coefficients		Standardized Coefficients	T	P
	B	Std.	Beta		
(Constant)	0.293	0.484		0.606	0.559
Surreal- logical	-0.357	0.088	0.654	4.052	0.003
Striking- latent	0.380	0.126	0.484	3.002	0.015

attracts attention, users may perceive that the design is innovative.

Effect of Contradictory Images on Comprehensive Evaluation Preference

To explore the images that affect user preferences during sample use, “like–dislike” was used as a dependent variable, and the other 11 image evaluations were used as independent variables

in a linear regression analysis. The regression results of each innovative oxymoron example are presented as follows.

Images affecting the overall “like–dislike” evaluation were “differential–coordinating” and “surprising–expected.” In other words, if a design makes users feel surprised while maintaining high overall coordination, user preference for the product may increase.

Table 9. Regression Analysis Results

Image word pair	Unstandardized Coefficients		Standardized Coefficients	T	P
	B	Std.	Beta		
(Constant)	3.983	0.361		11.038	0.000
Different- coordinating	-0.536	0.106	-1.006	-5.034	0.001
Amazing- predictable	0.358	0.123	0.581	2.909	0.170

Conclusion

This study used 12 new oxymoron design-transformation methods obtained previously to generate 12 new oxymoron

design examples. To explore the contradictory-image components of the innovative oxymoron examples, this study conducted principal component analyses of contradictory-image testing for over-

all perceptions of use, operating method, and product feedback.

The contradictory-image components for overall perceptions of use were mainly “novelty–tediousness,” “indirectness–directness,” and “anticipation–dullness.” The contradiction-image components for the operating method were mainly “novel operation–tedious operation,” “indirect operation–direct operation,” and “operation with anticipation–dull operation.” Those of product feedback were mainly “hesitant feedback–firm feedback,” “novel feedback–

tedious feedback,” and “feedback with anticipation–dull feedback.”

To establish the three oxymoron composition models corresponding to the innovative oxymoron examples, the relationship between overall perceptions of use and contradictory image was identified by distributing principal component scores in image spaces formed by three principal axes. The scores were then converted into corresponding oxymoron composition models.

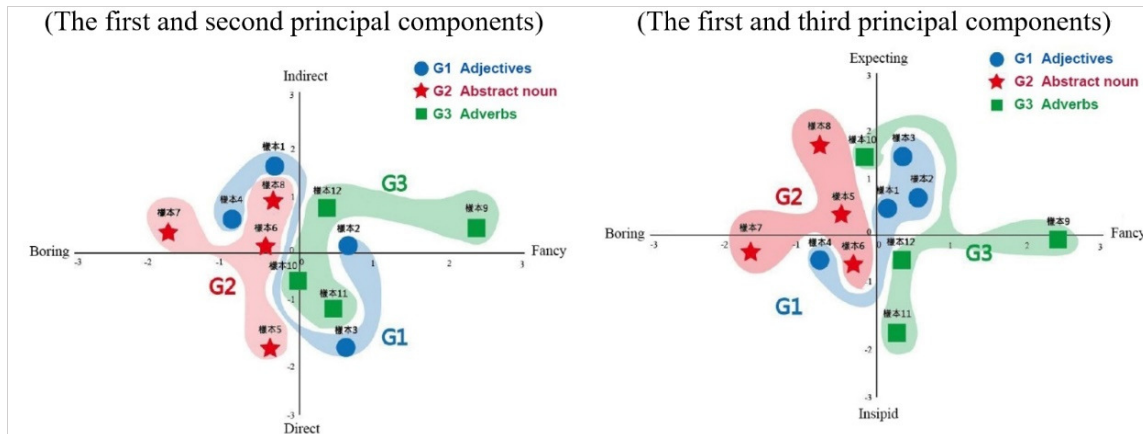


Figure 5. The three oxymoron composition models

The adjective modifier in Model 1 yielded moderate distributions on the first and second principal component axes without observable deviations. The results of the first and third principal components revealed a high sense of anticipation. In the transformation of new oxymorons in product use, the adjective modifier was composed of adjectives and nouns. The parts of speech transformed during attribute listing were “property and status” and “parts and

overall appearance.” In design conversion, the textural and status changes of adjectives increased the sense of anticipation in product use. The transformation of nouns regarding appearance and part variation did not yield a notable difference in perceptions.

The abstract-noun modifier in Model 2 corresponded to the sense of tediousness and indirectness in the overall coordinate distribution. In the trans-

formation of new oxymorons in product use, the abstract-noun modifier was composed of abstract nouns and nouns. Parts of speech converted in attribute listing were parts and overall appearance. Perceptions of differences and contradictions were apparent only in appearance and parts in terms of design conversion, providing limited design cut-in points. Therefore, this model evoked a sense of tediousness and dullness.

The adverb modifier in Model 3 corresponded to the sense of novelty in the overall distribution. In the conversion of new oxymorons in product use, the adverb modifier was composed of adverbs and verbs. Parts of speech converted during attribute listing were “properties and statuses” and “functions.” In design conversion, the property and status changes of adverbs as well as the functional conversion of verbs increased product diversity. Therefore, this model evoked a sense of novelty and dullness.

In the overall use perceptions, the images that affected comprehensive evaluation “innovative–ordinary” of samples were “surreal–logical” and “attractive–concealed” during product use. The images affecting comprehensive evaluation “like–dislike” were “differential–coordinating” and “surprising–expected.” The images make users feel that a design is unconventional, diverse, and attractive while evoking a sense of innovativeness. By using the images, the users may feel surprised while enjoying high overall coordination of the product, thereby increasing user preferences for a product.

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