

# A Study on the Detection of Semantic Discontinuity between Product Expression and Consumer Perception of Apparel Products

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## Abstract

Many studies have investigated the semantic difference between designers and consumers in the last decade, but there are few studies on the key vector for semantic discontinuity detection of the product. We interviewed three apparel designers and developed a questionnaire with six different elements. The questionnaire was randomly distributed to 30 consumers, Kappa coefficient does the questionnaire analysis. The results of the study indicate that consumers are more likely to perceive the semantic continuity with a designer's physical product than photography. The results provide a way of effective communication with consumers for designers and allow setting the goals for the intended semantic expression in design, decision-making, and establishing the basis for good communication between designers and consumers in the fashion industry.

**Keywords:** Clothing code, semantic discontinuity detection, communication

## 1. Introduction

As the COVID-19 has spread around the world, especially in Europe and the United States, the “Big Four” fashion weeks (Milan, London, Paris, and New York) have been impacted in 2020. According to NSS Magazine, fashion houses lost between €3 billion and €40 billion in sales with decreasing stock price losses. “I think the epidemic has brought the fashion industry to a standstill,” Wintour, editor-in-chief of Vogue US, said on CNBC's Closing Bell show on 21 March, “and everybody is rethinking what the fashion industry stands for, what it means and what it should be.” Take ZARA as an example. In 2020, the performance of Inditex Group has been plagued by the epidemic and cannot return to its former glory. Public financial report data shows that the Inditex Group lost 400 million euros in the first quarter of 2020; although it turned losses into profits in the second quarter, it still fell 74% from the same period last year, and Inditex would close 1,200 stores. The data showed that off-line stores in the fashion industry are experiencing a severe impact, and the detection of the semantic discontinuity between product expression and consumer perception became more important than ever. The main motivation of this study is to develop a well-established semantic detection tool during this recession in the fashion industry. The purpose of this study is to detect and analyze

the semantic discontinuity between apparel products and consumers to establish better communication between designers and consumers.

The epidemic has caused social turmoil and anxiety, and the fashion industry has a huge impact. Economists of the post-epidemic generation have proposed that people's consumption habits will change significantly. Designers realize the change of this phenomenon and must abandon their original thinking (Hassenzahl, 2003). A new type of relationship is flowing between designers and consumers. (Lo et al,2020).

Designers continue to develop and test each new product, and the birth of each new product is not easy. "This is a great opportunity for brands to explore a wider range of effects than their products," says Patrizio Miceli, founder of Al Dante, a creative consulting group. Some brands are beginning to provide real meaningful services to their communities, rather than just constantly adding new products. (Hekkert & Van Dijk,2011). The cycle of new products is very short, as short as 3 weeks to disappear, and even some new products are not better than the old products worthy of attention, this phenomenon causes the fashion industry to waste too much. The economic development in the post-epidemic era further proves that the sales cycle of such new products is so short and has no arbitrary meaning. The brand has to terminate this fashionable business model. (Kuang et al,2020).

Strengthen the communication and value of each product, and attach to the semantic distance between designers and consumers. At a time when the world was forced to stop and fight the epidemic together. Well-known fashion designer Giorgio Armani said in an open letter to Women's Wear Daily. The current epidemic crisis also lets everyone know that slowing down cautiously and wisely is our only way out. This path will eventually lead us to find Return to the value of the works, and then let consumers understand their importance and meaning.

A two-stage questionnaire was completed to address the potential semantic issues between consumers and designers. In the first stage, the questionnaire identifies whether products or product photos help consumers understand the intended semantic expression of the designer. In the second stage, we explored the semantic gap between consumers and designers and tried to identify and analyze the issues.

## 2. Literature Reviews

### 2-1 Exploring the value of this research from semantics

In 1883, French scholar Michel Breal mentioned "Semantics as Science" for the first time, and in 1897, the first book on semantics was born. Semantics has become a unique subject. Semantics is used in linguistics, logic, cognitive science, psychology, and many other fields. (Lai,2017) mentioned that psychologists, philosophers, and linguists paid special attention to semantics. The understanding and interpreting mechanisms involved in this study focus on the philosophical concerns about how people perceive various facts and they relate each other. We attempt to understand how semantics works and how it becomes an effective bridge between designers and consumers. (Petiot & Yannou,2004).

Although there are some commonalities in semantics research across research fields, specific research methods and contents differ greatly. In this study, we searched for published semantics-related research in the past decade and compared semantic intentions and realization in product design. The examples of semantic studies in the last decade include the following: (1) the study of high-end furniture impressions uses product photos as the main objects (Khalaj&Pedgley,2014) ,(2) conveying specific information, (Deininger

et al,2017) (3) exploring designers' capability of embodying design concepts by the product forms and whether there is a semantic gap in the transmission of information by using photos of various types of electronic products as the main objects (Shigemoto & Moultrie,2015) , (4) exploring the semantic differences between designers and consumers of automobiles by using photographs of automobiles as the primary objects (Hu et al, 2013), and (5) designers of semantic discontinuity detection, using physical chairs as the primary objects (Khalaj & Pedgley,2019). In semantic research, we found that product photos were preferred by researchers. However, it is still unknown if photography can be a tool for semantic detection in the apparel industry. To reduce the semantic distance between apparel designers and consumers, the detection tool is designed for reducing a semantic discontinuity. (Graessler & Poehler,2019)

Nearly ten years of fast fashion consumption patterns, we must be no stranger. Many designers and experts have expressed concern about the sustainable development of the environment and natural ecology caused by the fast fashion cycle. (Fung et al,2021). The outbreak has made the problems caused by fast fashion more transparent and an opportunity for the fashion world to look at it. (Claxton & Kent ,2020) What does designers and consumers mean by such rapid consumption? Patrizio Miceli points out "that brands should actually value their cultural influence rather than launching new products quickly. This crisis has made it impossible for us to communicate in the same way, and we will try to make sense of everything we do."

Many new economic patterns (Park et al, 2020 、 Gu et al, 2020)) have emerged or are about to emerge over the next decade. European political scientist Ivan. Ivan Krastev (2020) , in his book POLITICS AND THE PANDEMIC, says that neo-corona pneumonia is just a repetition of past crises. It's a turnaround, but it's also a serious crisis (Song, 2020 、 Stelter, 2020).

There will be an inevitable difference between the product semantics that the designer wants to express and the user's understanding of the product's personality or experience, which is the discontinuity mentioned in the theme. How to reduce such differences is testing the professional ability of designers. Designers can transfer to understanding consumer needs through keen observation of products. Effective communication skills between designers and consumers are important for brand creation and business model construction (Song ,2019). Under the impact of this epidemic, it is necessary to reconnect the communication distance between designers and consumers. The motivation of this research is to develop a method that can deeply explore the nature of semantic discontinuities, and the principles of development are: For the fashion industry: "Clothes are no longer just consumer products under fast fashion." For designers: "The discontinuity of product semantics is a serious issue. Designers should do in-depth discussions, just as they value the output of each piece of clothing." For consumers: "Through the designer's emphasis on product semantics and conveying the value and meaning of each product, consumers know what product they are buying, rather than just knowing that it is a piece of clothing that can be thrown away." We need to pay attention to the continuity and discontinuity of product semantics. (Khalaj & Pedgley, 2019) .

## **2-2 Exploring the value of this research from semiotics**

Roland Barthes (1967) is a French literary critic on semiotics, argued in *The Fashion System* that fashion is not only an instrumental value used to cover up and keep out the cold but also an image-clothing. By extension, fashion is one of the signs of people's identity. Every garment, fabrics, and silhouettes have symbolic meanings conveyed by the designer, which in this study is called clothing codes. Clothing codes play an important role in communication between the designer and the consumer, when the consumer's

interpretation of the clothing code does not meet the designer's intentions, that is, the semantic discontinuity. The semantic discontinuity is critical to designers. Responding to the semantic discontinuity requires a well-developed two-way detection tool for detecting semantic meanings understood by designers and consumers. This study uses two-way questionnaires and interviews to examine the differences. This study used a two-way questionnaire with Kappa coefficient to analyze and verify these differences.

In 1992, Roland Barthes proposed the concept of semiotics, which studies the essence of signs of things, the law of development and change of signs, various meanings of signs, and the relationship between signs and various human activities. In recent years, semiotics has become one of the important elements of product development and cultural development, and it has become an important methodology for academic research in design-related fields such as graphic design, architecture and design schools (Wei , 2011、Lin et al, 2019).

His contribution to modernity comes from exploring how cultural differences affect the interpretation, encoding, transmission and decoding of messages. When a designer creates a product, it encodes a product and lets consumers decode it. The semantic discontinuity in the process of sending and receiving messages is the problem of poor translation. (Khalaj & Pedgley, 2019). In this research, through the external representations presented by symbols, we can experience its existence through the five senses (He ,2019), and a questionnaire survey of 6 dimensions cited by the designers of this study. Size and style are Vision, composition is taste, and material is tactile.

### 3. Research Methods

#### 3-1 Research design

The hypotheses of this research are divided into the following two points:

- (1) The semantics between the designer and the consumer are not continuous. Therefore, when the economic turmoil caused by the epidemic situation, the sales performance has dropped seriously: Under the baptism of fast fashion, designers should consider the semantic distance of their products from consumers.
- (2) Researchers need to consider the continuity and discontinuity of semantics when choosing a research carrier, including sensory surveys such as touch and smell: The choice of research vehicle should also take into account the discontinuity of semantic meaning.

This study assumes that an appropriate research vector reduces the semantic discontinuity between designers and consumers and that consumers' preference of the vector is conducive to the detection of the semantic discontinuity between product expression and consumer perception. (Hsu et al.,2000). Interviews were conducted with three fashion designers, and the questionnaires were designed based on the “clothing codes” mentioned by Roland Barthes in his book “The Fashion System”, which were sizes, styles, visual imagery, lines, tactile impression, and fabrics.

A two-stage detection tool was designed for semantic discontinuity.

Stage 1: Data collection and interviews with designers

An interview was conducted with a designer who provided products and product photographs of two research objects (Figs. 1 and 2). The designer's answers to the questionnaire were collected and analyzed.

## Stage 2: Evaluation and expression of participants' product perception

With the two objects as apparel products, 30 participants (customers) were selected at random as the subjects.

The explanation of questionnaire A: According to a subject's choice, the subject was provided either a real product or a photograph and filled the questionnaire A.

The explanation of questionnaire B: A questionnaire survey with 6 elements was conducted on garments in Figs. 1 and 2. The data and evaluation were collected and analyzed (Table 1).



**Fig. 1 Design A**



**Fig. 2 Design B**

According to different data types, there are many ways to calculate consistency reliability. This study is suitable for the calculation method of Cohen Kappa coefficient of nominal scale data types. The data code of the research object itself is just a "code", and there is no relationship between the code and the code in order, interval, or proportion. It mainly discusses the proportion of matching codes between designers and consumers. Since Cohen Kappa excludes randomness of random filling by coders, it is more credible than pure matching percentage.

Kappa coefficient is a common method that can be reset in clinical practice to determine whether different tests or diagnostic methods are consistent. It is mainly used to assess whether the diagnostic results of two medical staff or whether the two test methods are consistent. This research applies Kappa coefficient to assess whether designers and consumers have consistent views on the same object.

In this study, Kappa coefficient is used to detect product semantics as a new application of research methods. Kappa values can be roughly divided into five groups to represent different levels of consistency, as follows:

- 0.0~0.20 very low consistency
- 0.21~0.40 general consistency
- 0.41~0.60 moderate consistency
- 0.61~0.80 high consistency
- 0.81~1 almost completely consistent

The results of the research can be analyzed from the analysis in SPSS statistics-the cross-tabulation in narrative statistics to analyze whether designers and consumers have consistent views on the same object.

From the report, you can find out what the Kappa coefficient of the analysis result between the designer and the consumer is, and whether the significance p-value has a significant relationship. And with Pearson-related analysis, analyze whether gender and age are related to the choice of research vector, increase the credibility of the study. (See Table 2)

### **3-2 Subject's Information**

Subjects randomly sampled: 30, 9 males and 21 females.

Age: 9 from 21-30 years old, 7 from 31-40 years old, 7 from 41-50 years old, 7 from 51-60 years old

Therefore, the distribution of the number of subjects in this study conforms to the normal curve (The Normal Curve) and the concept of normal distribution. They are very important in statistics. They are the basis of inferential statistics. Coupled with the mean and standard deviation, we can make fairly accurate descriptions and inferences on the distribution of data obtained from empirical research. This can be done because the normal curve itself has some important and known characteristics. The data distribution of the variables actually obtained in this study is quite close to this model, there is a certain degree of credibility.

### **3-3 data analysis method**

Kappa coefficient is a commonly used method used clinically to establish the consistency of different testing or diagnostic methods. This study applied it to the detection of the meaning of the product, to evaluate the designer and consumer on the same item Whether the semantics of are consistent.

The results of the Kappa coefficient, which was answered for the questionnaire questions by 30 subjects and designers, are shown in Table 3.

## **4.Results and Analysis**

73% subjects chose the physical product as the research vector for the evaluation and product expression. More participants believed that the physical product was better than the photograph to understand the product semantics that the designer tried to convey.

For the questionnaire A, there was no significant difference by gender between selecting the photograph and the physical product. The age of the participants showed a significant difference.

For the questionnaire B, the average score of 22 subjects who chose the physical product as the research vector was calculated to figure out the conformity of product semantics with consumer perception. The result indicated that nearly half of the subjects understood the designers' semantic intentions on styles, tactile impressions, and fabrics but not on lines that had a significant semantic difference between designers and consumers. The results of the study are shown in Table 1.

Some of the subjects did not understand the meanings of the terminologies used in the questionnaires, such as fabrics, fabric composition, and specific terms for describing lines in garments, which caused semantic gaps with the designers. The results showed that 45% of the test subjects understood the designer's product semantics.

The research results are shown in Table 1.

**TABLE 1 : Semantics discontinuity detection (unit: average number of participants)**

Designer / Question	Q1	Q2	Q3	Q4	Q5	Q6
DesignA	12	8	10	4	10	11
Design B	7	14	6	7	13	15
Average	9.5	11	8	5.5	11.5	13

Unit: person

There is no correlation between gender and age and the carrier of the selected research. The research results indicate that gender and age do not interfere with the hypothesis of this research. Pearson-related analysis is shown in Table 2.

The results of the Pearson-related analysis are shown in Table 2. It turns out that: Gender [  $r(28) = -.32, p = .07$  ], Age [  $r(28) = .05, p = .7$  ], Gender and Age  $p > 0.5$

There was no significant correlation between gender and age and the choice of photographs and entities.

**TABLE 2 : Correlation matrix between gender, age and selected photos and entities (N=30)**

	1	2	3
1. Gender	1	.02	-.32
2. Age	.02	1	.05
3. Photos and entities	-.32	.05	1

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ 

The results of the Kappa coefficient, which was answered for the questionnaire questions by 30 subjects and designers, are shown in Table 3.

**TABLE 3 : 30 subjects and 1 designer of Kappa coefficient**

SUBJECTS KAPPA	VALUE	ASYMPTOTIC STANDARD ERROR	ABOUT TB	APPROXIMATELY SIGNIFICANT
1	.229	.185	1.429	.153
2	.551	.182	3.319	.001
3	.450	.183	2.801	.005
4	.444	.188	2.753	.006
5	.327	.203	1.956	.050
6	.439	.176	2.789	.005
7	.450	.177	2.857	.004
8	.660	.173	3.923	.000
9	-.009	.172	-.057	.955
10	.192	.188	1.119	.263
11	-.009	.172	-.057	.955
12	.103	.167	.648	.517
13	.086	.177	.517	.605
14	.222	.183	1.368	.171
15	.439	.190	2.627	.009
16	.094	.174	.560	.575
17	.339	.175	2.158	.031
18	.229	.179	1.521	.128
19	.200	.185	1.184	.237
20	.301	.199	1.820	.069
21	.333	.187	.187	.037
22	.208	.197	1.269	.204
23	.327	.189	2.007	.045



24	.434	.196	2.578	.010
25	.077	.156	.467	.640
26	-.132	.130	-.816	.414
27	.363	.162	2.582	.010
28	.345	.181	2.254	.024
29	.556	.179	3.365	.001
30	.160	.138	1.022	.307

Kappa values can be roughly divided into five groups to represent different levels of consistency, as analyzed for Table 3 as follows:

- 0.0 to 0.20 Low consistency 9, 10, 11, 12, 13, 16, 19, 25, 26, 30 out of 10
- 0.21 to 0.40 General consistency 1, 5, 14, 17, 18, 20, 21, 22, 23, 27, 28 out of 11
- 0.41 to 0.60 Medium consistency 2, 3, 4, 6, 7, 15, 24, 29 out of 8
- 0.61 to 0.80 A high degree of consistency out of 1
- 0.81~1 It's almost exactly the same

The  $p < 0.05$  has a high degree of consistency with designers is number 2, 3, 6, 7, 8, 29. Of the 30 subjects, 10 showed low consistency with the designer's language distance, 11 showed general consistency, 8 showed medium consistency, and 1 showed high consistency.

## 5. Discussion

In the past ten years, in the research on product semantics, researchers prefer to choose photos as the research carrier. However, among the 30 test subjects in this study, nearly 70% of the test subjects prefer to choose the entity as the research vehicle, but among the many literatures on product semantics, only the research of Hsu (2000), Ahmed-kristensen (2014) is Use physical products .This phenomenon shows that the use of product photos may be for convenience and to make the questionnaire easy to carry, or to get the best evaluation and bring more photos through the visual beautification process. However, this kind of carrier was chosen as one of the reasons for the discontinuity of semantic meaning in this study. In the statistics of questionnaire A, this study has confirmed this result. Consumers like to study entities as the vehicle, but many semantic studies use photos, which is worthy of our reflection.

The purpose of this research can provide designers with a way to effectively communicate with consumers and set goals for the semantic expression expected in design and decision-making. It also laid the foundation for good communication between designers and consumers in the fashion industry to help you find out where the semantic discontinuity occurred in the product design? And its severity. In this way, we can verify between the designer's design purpose and the actual result. The focus of this article is that the choice of a transparent research carrier is something that researchers must consider. It may be one of the reasons for the discontinuity of product semantics, and researchers must carefully consider it.

The apparel industry has taken fast fashion as its main leadership position for many years, Product development focuses on rapid product rotation, and focuses on products that create the highest commercial

value. Take ZARA, a clothing brand famous for its fast fashion production model, as an example. Before the outbreak of the epidemic, the fashion industry and consumers were very accustomed to the consumption model of rapid consumption and rapid elimination. Now the fashion industry is facing a new "opportunity", this opportunity makes the fashion industry re-aware of the value of the product itself. As Patrizio Miceli, the founder of the creative consulting group Al Dante, said: "For brands, this is an excellent opportunity to explore a broader impact than their products." Some brands are beginning to provide truly meaningful services to the community, rather than just constantly adding new products. At this concept, this research proposes the importance of product semantics to the discontinuity between designers and consumers. When the designer and the consumer form a consensus on the connection of the product. The product is no longer just a consumer product, but a necessity full of meaning. Consumers and products make sense, the value of the product is also higher.

The number of people who chose the physical product as the research vector was 22 and the number of product photographs was 7. The difference in the number of people was caused by the limitation of this study. Therefore, it was not possible to explore which of the two factors was closer to the designers' semantics. Therefore, we compared the data of semantic meanings of 22 subjects who chose the physical product as the research vector with the semantic intentions of the designers. The following comments were made in the questionnaire B.

- (1) They cannot know the size of a garment just by looking at the photo, so it is good to communicate if you provide the photographs with a proper proportional scale.
- (2) They think that Design A is both fashionable and individualistic, and Design B is both casual and urban-stylish. The style of apparel is ambiguous to make a proper decision.
- (3) For Question 4, it is easy to understand the designer's question by only using adjective phrases. It is very possible to misunderstand the meaning of the question by using more technical terms such as Y-shaped lines and A-shaped lines.
- (4) The participants who choose the product photographs as the research vector determine the fabric and its tactile quality by referring to the details of the design. For example, the zipper in Design A makes it look stiffer, while the collar in Design B makes it look softer.
- (5) The participants said they did not know what cellulose acetate was, so they could not know what it smelled like. When you buy a garment, you do not pay much attention to the ingredient labels. People mostly use their hands to determine the quality of the fabric.

The above is the feedback given to the designers by the participants during the interviews.

Among the 30 subjects, only one showed a high degree of consistency with the designer's semantic distance. Such research results indicate that the semantic distance between designers and consumers is more important for products. Such results increase the value of this research and can be used as a reference for semantic research in future research.

22 of 30 participants believed that the physical product conveyed the semantic intentions of the designer better than the photograph. The result represented that the epidemic did not change the decision. However, the fashion industry has been devastated by COVID-19 pandemic. It is not only making challenges for designers responding to the situation but also provides a new prospect for physical stores. It turns out that consumers think that the physical product is the best vector to understand the product semantics by the

designer. Two-way communication between designers and consumers helps designers understand consumer perspective on products through research and consumers understand product semantics through semantic detection.

For Table 2, among the 30 subjects, only one showed a high degree of consistency with the designer's semantic distance. Such research results indicate that the semantic distance between designers and consumers is more important for products. Such results increase the value of this research and can be used as a reference for semantic research in future research.

## 6. Research Contribution

Among the 30 test subjects, the results of the study on kappa values of style A and style B indicated, there is only one consumer who presents a high degree of consistency with the designer's product semantics. The six facets representing designers in clothing styles are as follows: clothing size, clothing style, visual imagery, clothing lines, fabric texture, and fabric composition. Consumers are not clear about the message that the designer wants to convey from the product. In interviews with three fashion designers, the researchers said that under the fast fashion cycle, The new clothing market cycle is only three weeks (or even shorter), and the new products will become auction items after three weeks. However, the entire cycle of fabric selection, testing, planning, design, pattern making, cutting, production, and marketing for each style is about 4-6 months.

Fast fashion has caused a waste of social resources and has a huge impact on the environment and ecology. The reflection of the epidemic on the fashion industry is just one case among many, Other design-related industries should use this as a reference for reflection. The results of this research correspond to those mentioned in the introduction.

As mentioned in the preface of this research, Patricio Micelli, founder of the creative consulting group Al Dante, said: "For brands, this is an excellent opportunity to explore a broader impact than their products. Some brands are beginning to provide real meaningful services to the community, not just constantly adding new products, brands must terminate this fashionable business model. " The famous fashion designer Giorgio Armani said in an open letter to Women's Wear Daily:

"The current pandemic crisis also lets everyone know that slowing down cautiously and wisely is our only way out. " The designer's responsibility is to let consumers understand the importance and significance of the product. Therefore, in this experimental design, this study completed a two-stage questionnaire. Attempt to resolve and transparentize the problems between consumers and designers. In the first stage, the questionnaire determines whether the product or product photos help consumers understand the designer's semantic expression. In the second stage, we explored the semantic gap between consumers and designers, and analyzed these issues. The discovery of these problems will help designers improve, inspect and pay attention. When the fashion industry and designers begin to pay attention to this area, it is the biggest contribution of this research.

## 7. Conclusions and Recommendations

The research results of questionnaires A and B designed by 3 designers are as follows :

22 out of 30 participants thought that the physical product as the research vector was better to understand the designer's product semantics than the photograph. The results indicate that nearly half of the participants understood the designers' semantic intentions on styles, tactile impressions, and fabrics but not on lines. The subjects believed that they could know more details of the size, material, and tactile quality of the garment through the physical product, which could not be given from the product photos. They even thought that there was a huge gap between the photographs and the product. These semantic discontinuities affect brand perception, so designers must take into account the comments made by the subjects.

The results of the Kappa coefficient study are as follows:

Among the 30 subjects, 10 subjects showed low consistency with the designer's semantic distance, 11 showed general consistency, 8 showed moderate consistency, and 1 showed high consistency .

Based on the above research results, the conclusion of this research:

- (1) It can be used in the design community to do semantic detection for different products, shorten the semantic distance between designers and consumers.
- (2) It can be used as a basis for the performance of new products before they are launched on the market.
- (3) This kind of experimental design can clearly know consumers' opinions on new products, and can create a good communication channel between designers and consumers.
- (4) Semantic detection can make a good cycle and future indicators for the environment. (Lee,2020).

The results of this research that through a questionnaire survey conducted by three fashion designers, the semantics between designers and consumers are extremely discontinuous. The purpose of this research is to explore the verification between the designer's design purpose and actual results. This article focuses on the development and dissemination of methods, so that the fashion industry pays more attention to the semantic transmission of products and pays attention to the smooth communication channels between consumers and designers. This study provide designers a pertinent recommendation that the semantic detection settings of products, whether using physical products or photographs, must take into account the background of consumers or add some description on the terminologies in the questionnaire to reduce the semantic discontinuity generated by the participants' different backgrounds (Chang,2020). For future research on detecting semantic discontinuity, researchers need to overcome the limitations of this study and further explore whether the research vector is a physical product or a photograph. Better communication between designers and consumers is achieved and established with the basis between designers and consumers in the fashion industry. Fast fashion caused the value of products to be diluted by the benefits, expect this outbreak to bring the impact of the fashion industry, can improve this phenomenon. The results of the discontinuous semantics in this study have been verified in the experimental design. The fashion industry's losses due to the epidemic, Experts and scholars called new opportunities. We envision that this set of research methods can be applied to the three aspects of professional design practice, design education and academic research. Designers can face this problem of semantic discontinuity. Using their own expertise to examine such results, through the second phase of this study experimental model has found the answer.

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## 9. Appendix

The questions in Questionnaire A are shown as follows:

This questionnaire is designed to help designers and consumers detect product semantics. In your opinion, which of the following options can help you better understand the semantics of the product that the designer is trying to convey?

1. Product photographs

2. Physical products

About the six elements of product semantics of apparel, the questions in Questionnaire B are shown as follows:

Question 1:

What size do you think this design is?

1.S Size 2.M Size 3.L Size 4.XL Size

Question 2:

What do you think the designer wants to convey?

1.Fashionable 2.Individualistic 3.Casual 4.Urban-stylish

Question 3:

Which imagery of four seasons do you think the designer is trying to express?

1.The warmth of spring. 2.The keeping out the cold and the heavy look of winter. 3.The loneliness and desolation of autumn. 4.The freshness and breathable feeling of summer.

Question 4:

Which of the following options do you think the designer would like to express in the form of clothing codes?

1.Y-shaped: gentle and graceful. 2.H-shaped: tough and strong. 3.A-shaped: dignified and elegant. 4.S-shaped: a sexy female.

Question 5:

How do you feel about the tactile properties of this fabric?

1.Smooth 2.Tough 3. Fluffy 4.Stiff

Question 6:

What do you think the fabric smells like? 1.Cotton 2.Plastic 3.Cellulose Acetate 4.No smell

# 服裝產品產品表達與消費者感知之間語義不連續性 檢測研究

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## 摘要

在過去的十年裡，許多研究都調查了設計師和消費者之間的語義差異，但是對於產品語義不連續性檢測的關鍵載體的研究很少。我們採訪了三位服裝設計師，並開發了一份包含六種不同元素的調查問卷。問卷隨機分發給 30 名消費者，Kappa coefficient 做問卷分析。研究結果表明，消費者對研究載體的選擇，實體比攝影照片更可能感知設計師的語義。此結果為設計師提供了與消費者有效溝通的方式，為設計、決策中預期的語義表達設定了目標，並為時裝行業設計師與消費者之間的良好溝通奠定了基礎。

**關鍵詞:** 服裝代碼、語義不連續檢測、溝通