Digital Media Based Design of E-Commerce Platform APP from the Perspective of Multimodal Discourse Analysis

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Abstract: With the progress of Internet technology, online shopping has become an emerging shopping style with access to a large amount of product information at one time. Thus, E-commerce platforms follow the trend and gradually become a new subject with strong market competitiveness in the business field. The competition between current e-commerce shopping platforms has shifted from that of products and services to that of advertising and marketing strategies. The carrier to deliver advertising and marketing information is the platform's APP based on digital media technology. From the perspective of visual grammar, this paper explores how multimodal discourse conveys information, generates meaning and constructs images by analyzing the homepage of Taobao APP, a Chinese online shopping platform.

Keywords: Multimodal Discourse Analysis; Visual Grammar; Digital Media

1. Introduction

1.1 Online Shopping Platforms Based on Digital Media Technology

Recently, rapidly developing technologies and fast-paced social life have encouraged consumers' online shopping behaviors and created an increasing number of Chinese e-commerce companies with their own sales platforms, such as Tmall, Jingdong, and Pinduoduo. These successful e-commerce companies operate by establishing third-party sites as a channel to build a platform for sellers. Like Youtube, Twitter, Facebook and other streaming media and social media platforms, contain rich multimodal resources such as images, videos, hyperlinks, colors, etc. The personalization, convenience and visualization of the pages help them realize their marketing strategies through elements such as title, copywriting, and graphic design[1]. Today, with the progress of digital media and network technology, it is of great practical significance for digital marketing to bring out the advertising benefits through effective visual symbolic resources.

Taobao, one of the largest online retail platforms in China, was founded by Alibaba in 2003 with a sales range includes clothing, electrical appliances, books, food and other commodities. Given its wide audience and high product repurchase rate, Taobao is a quality representative among Chinese e-commerce platforms. This paper conducts a discourse analysis on the homepage of Taobao APP, with the aim of exploring how multimodal discourse integrates meaning through the choice of symbols and the collaboration between multiple modalities to achieve marketing strategies and interpersonal communication between sellers and buyers from the perspective of visual grammar.

1.2 Visual grammar theory

Nowadays, the way people receive information has changed from the unimodal form of a single text to a multimodal form formed by the combination of images, colors, sounds, etc. Therefore, the traditional discourse analysis for studying texts has gradually shifted to a multimodal one. Multimodal discourse analysis theory is based on Halliday's theory that "language is a social sign"[2]. Halliday further identified three major meta-functions of language -- ideational function, interpersonal function, and text function[3].

Although the three metafunctions are based on the study of language, with the increasing attention and researches on nonverbal

symbols, metafunctions are no longer limited to language, but are also applied to the analysis of other social symbols. Kress and Van Leeuwen constructed a visual grammar framework centered on representational meaning, interactive meaning, and compositional meaning[4].

2. Methodology

Visual grammar theory is commonly used for visual corpus analysis. Taobao APP's homepage contains a number of visual symbols such as title, logo, slogan, and symbolic pattern, etc. Through visual symbols, the abstract cultural traits, service content and corporate vision are visualized, thus stimulating consumers' interest and providing them better experience. When searching through Google Scholar, studies on the composition of APP's homepage from this perspective are rarely found. Based on the above, 27 pictures from the homepage were selected as the corpus for specific analysis. This paper analyzes how the various symbolic modalities such as speech, images, and links in the page interact with each other, and what representational meaning, interactive and compositional meanings are conveyed to users.

3. Analysis on Text Symbols

The first thing one would notice when opening Taobao APP is the search bar at the top of the page. The search bar has a rotation of popular search terms. Users may click the "search button" on the right to search for relevant product. The most popular search keywords are noun phrases modified by adjectives, such as "furry winter jacket", "American vintage style jeans" and so on. These phrases are more likely to stimulate consumers' desire to shop than individual nouns, as they bring a sensory appeal to the viewers through the text. Below the search bar, the navigation bar contains buttons such as "New Products" "Today's Best" "Products Category", etc, basically with neutral noun phrases, which is in line with the characteristics of this partition as a quick function partition. The quadrangle in the middle of the page contains items such as "Taobao Live", "Tao Cai Cai" (Taobao's online grocery store), and "Shiyi Subsidy" (the page that provides shopping subsidy), which leads to different pages, indicating different business scopes of the platform. The bottom row of the page includes "My Taobao"(individual information center), "Shopping Cart", "Messages", and other user-related functional areas. At the same time, in order to balance the design of the whole page, Taobao has added convenient and functional buttons in the corners, such as refresh button and check-in button, so that customers can check and update the information on the page in real time, reflecting the brand's "customer-centric" idea and enhancing the customer's convenience. Users may also scroll down to see a large number of product recommendations.

There are a total of 38 sentences in the corpus, 16 of which are in the declarative tone to provide consumers with information such as holiday sales, new products, discounts, etc. to induce consumers to click and browse the inner pages of products; 12 sentences are in the imperative tone to realize a non-commanding and persuasive effect and therefore to call on consumers to take action to purchase; only 2 sentences in the corpus use the questioning tone, aiming to resonate with the consumer and stimulate them to desire to purchase. Additionally, the appropriate use of verbs is able to give life to the text. For example, "limited time to buy" gives people a tense experience and makes consumers more likely to buy.

4. Analysis on Visual Symbols

4.1 Representational Meaning

Kress and Van Leeuwen suggest that any symbolic modality can reproduce the object of study and the social relations between them and reflect the relationship between environment, place and event in the image. Representational meaning suggests that visual images are capable of faithfully reproducing things in the objective world as well as the activities of the human inner world"[5]. According to the corpus, it is found that the APP's homepage contains a large number of product pictures, and most of them are showing products in detail. This kind of picture display can expose visual content to better reach target consumer groups and drive more sales. In addition, the corpus analysis also reveals that many symbols are presented in promotional e-posters. The corpus was selected when the Chinese Mid-Autumn Festival was in progress, and the main symbols such as rabbits and the moon are all over the

posters, creating a strong festive atmosphere and echoing the promotional theme of the festival.

4.2 Interactive meaning

Interactive meaning is mainly used to establish the completed communicative meaning between the image creator, the viewer and the things represented by the symbols[6]. For example, distance mainly reflects the degree of intimacy between the three. Most of the pictures selected are taken from a close distance, and they are taken from a frontal perspective to allow the interactive participants to integrate into them, reflecting the "equality" between the two, increasing consumers' sense of immersion, and also magnifying the details of the product, showing the authenticity of the product, and eliminating consumers' worries about purchasing. A few images are panoramic views, which can be more intuitive for the display of products. Some images take a tilted angle to create a festive promotional atmosphere, allowing consumers to feel the cheerful atmosphere and guiding them to place orders in an immersive manner.

4.3 Compositional meaning

Compositional meaning refers to the layout of the symbols, which is the carrier to realize the representation of meaning. When ntering the homepage of Taobao, the pop-up instantly shows information about the current activities being promoted on the platform, ensuring that users can receive timely information about the offers. After closing the pop-up window, various partition icons and navigation icons are marked with colorful dynamic labels in the upper corner or on one side, attracting users' attention. The labels are usually filled with expressions like "for free", "help you save your money", "pick up something", etc. These tabs are conspicuous by their bright colors and animations, highlighting the important information the platform wants users to see.

The composition of the rotating posters is mainly divided into two categories, one is the top-down three-quarter composition, photographs of products are distributed in the middle, with concise texts on upper and lower side, which highlights the selling points of the product; the other is the left-right composition, giving people a balanced feeling and reaching the overall visual effect of harmony. There is no doubt that the pictures of the products tend to occupy the majority of the whole page and are placed in the prominent position, aiming to attract consumers' attention to the product, while the text is the supplementary explanation of the selling point or promotion information of the product.

5. Conclusion

With the rapid development of network and digital media technology today, it is of great significance to construct and convey marketing information through online visual symbolic resources. This paper has analyzed the case of Taobao APP, a Chinese e-commerce platform and examined its textual and non-textual symbols. The results show that its pages use visual symbols such as text, images and color symbols to convey information to users, catering to consumers' needs. Representational, interactive and compositional meanings have also been analyzed to understand the process of constructing the overall meaning of the page design in which images play an important role. Taobao APP thus promotes the articulation and coherence of its pages, enhances sellers' ability to attract attention and also cultivates customer loyalty, continuously shaping the competitive advantage of e-commerce enterprises.

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