

# *Meaning Constructed by Images in Cross-border E-business Websites*

—A Case Study in China from Social-semiotic Perspective

Fangmin Sun

Business School

Huanggang Normal University

Huanggang, China

Sunfangmin\_125@126.com

**Abstract**—In the new era of cross-border e-commerce, businesses should raise awareness of globalization and pay more attention to multimodal communication. Image is a kind of social semiotic as important as language. Gunther Kress and Theo van Leeuwen's theory of Visual Grammar suggests that images can convey representational, interactive and compositional meaning, which provides concrete and feasible guidance for this research. The study also employs the comprehensive theoretical framework of multimodal discourse analysis proposed by Delu Zhang and attempts to build a basic framework to analyze meanings constructed by images in cross-border e-business websites, mainly on three levels: contextual layer, expressive layer and technical layer. A case in China was further studied under this framework. With findings drawn from the general data analysis based on the case, this paper aims to provide useful advice for website designs and enhance people's visual literacy.

**Keywords**—Cross-border e-business; image; framework; case study; website design; visual literacy

## I. INTRODUCTION

Under the strategy of "Belt and Road", cross-border e-commerce has become a new impetus to the growth of China's foreign trade and is praised as the "Online Silk Road". Compared with offline physical stores, cross-border online stores have two salient features. First, online business participants are worldwide. As China's biggest e-commerce platform, AliExpress claims in the early 2017 that its buyers have already exceeded 100 million and they are from over 220 countries and regions around the world. Therefore, the e-business companies need to analyze the different social, cultural, linguistic and religious backgrounds of global consumers before making their online sale strategies. Second, there is usually no instant shopping assistance provided due to global time zone differences and language barriers. Consumers rely heavily on website information presented by modes including pictures, texts, music, etc. Thus multimodal communication is vital for online businesses.

From a social-semiotic point of view, websites mainly composed of images and texts, though other modes such as animations and music might also be employed. In cross-border e-business activities, the websites play a significant role for promotional purposes and the homepage is a combination of banners, pictures and texts. Gunther Kress and Theo van

Leeuwen put forward the theory of "Visual Grammar" in 1996 through the in-depth study of images. They believe that images have the same social function as language and can convey representational meaning, interactive meaning and compositional meaning[4]. In other words, images can not only reflect the various events that occur in the objective world and the subjective world, but also display a variety of social relationships between the participants. The wide use of images in cross-border e-commerce websites is just a manifestation of the effective role that images play in the new era. In the field of cross-border e-commerce research, very few studies could be found in China focusing on website semiotics. There are several Chinese scholars, who have made some attempts to multimodal analysis on domestic shopping websites in recent years[5-8], but they rarely went into the systematic analysis of the three meta-functions of images, and they all ignored the context. Therefore, this paper intends to give an in-depth exploration into the meaning constructed by images in the context of cross-border e-business websites and focus specifically on a Chinese case for better clarification.

## II. THEORETICAL BASIS

The theory of Visual Grammar is put forward by Gunther Kress and Theo van Leeuwen in 1996. It might be understood as an extension of M.A.K.Halliday's Systematic Functional Grammar, which focuses mainly on linguistic symbols. According to Gunther Kress and Theo van Leeuwen, Image is a coherent semiotic system and implies representational meaning, interactive meaning and compositional meaning. The visual structures of representation can either be narrative, presenting unfolding actions and events or conceptual, representing participants in terms of class, or structure or meaning. The interactive meaning indicates the relationships between represented participants (the people, the places and things depicted in images) and the viewers, and we should also note that the interactive participants (the image producer) are often involved. The compositional meaning relates the representational and interactive meanings of the image to each other and form an integrated whole.

Another theoretical basis employed in this paper is the comprehensive theoretical framework of multimodal discourse analysis proposed by Delu Zhang in 2009. The framework consists four levels: the level of culture, the level of situation, the level of content and the level of medium [2]. The level of

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culture includes ideology and genre. The level of situation refers to the analysis of register, mainly reflected by field, tenor and mode. The content level includes semantic meaning (ideational meaning, interpersonal meaning and textual meaning) and formal level covering all semiotic systems and their relations (complementary and non-complementary relations). The media level includes verbal and non-verbal media.

Context analysis is an indispensable part of multimodal discourse analysis according to Delu Zhang's theory. It applies to the analysis of images as well. On one hand, the context provides the nurturing environment for visual symbols. On the other hand, it is further reflected by visual resources. Therefore, based on the theory of Visual Grammar and cultural context model, this paper attempts to construct a basic framework (see Fig.1) to analysis the meanings constructed by images presented in cross-border e-commerce websites. The framework has three levels, namely the contextual layer, the expressive layer and the technical layer. Contextual layer determines expressive layer, and is reflected by technical layer. Contextual layer includes cultural context and situational context. The home page of online store forms a situational context. The images presented on the page must reflect the social relations between the store owner (image producer) and buyers (image viewers), and serve the overall business purpose of increasing the sales of products. Situational context directly determines the choice of images, and how these images construct desired meanings, which is the function of expressive layer. The technical layer refers to the specific types of image.

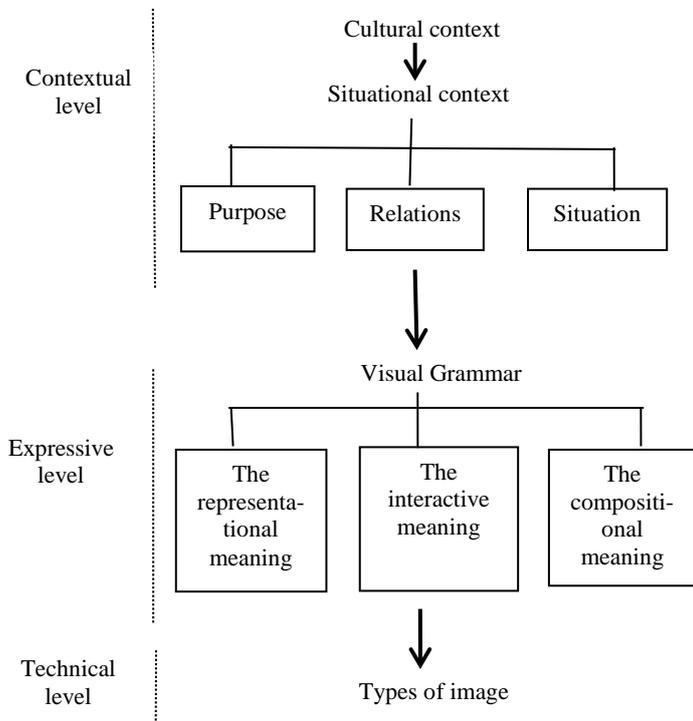


Fig. 1. Framework of image meaning analysis

### III. CASE STUDY

This paper takes LI-NING Official Store (hereinafter referred to as L store) on *www.AliExpress.com* as a case study. Data from L store's home page (on October 12, 2017) is collected for further analysis. Aliexpress is China's largest online trading platform focusing on cross-border e-commerce. It has successfully completed the transition from C2C to B2C in 2016 as an echo to "structural reform" advocated by Chinese government. LI-NING Company, with a household reputation in China, started its cross-border e-business in the platform in 2016 and is awarded the "Best Seller" medal for its high quality and reliability.

For better clarification, each piece of images was marked on the target web page. Then they are classified into the five groups (see Table I.) according to their functions.

TABLE I. CLASSIFICATION AND STATISTICS OF IMAGES IN L STORE HOME PAGE

Group	I	II	III	IV	V	Total
Content	Pictures of products	Pictures of models	Brand logo	Shopping icon	Nationality icon	
Pieces	86	18	41	6	12	163
Ratio	53%	11%	25%	4%	7%	100%

#### A. The representational meaning

Kress and van Leeuwen used a pair of terms 'narrative' and 'conceptual' to differentiate two different types of representational patterns of image.

1) If the represented participants are connected by a vector, they are represented as doing something to or for each other. Therefore, Group II in Table 1 *constructs* a narrative meaning. Group I can also be 'narrative' if vectors are added. In Fig.2, the model's arms and legs form the vectors and thus this picture represents his running process, which indicates that LI-NING brand sportswear and running shoes facilitates sporting activities. The man's forward-looking eyesight and uplifted lips constitute another two vectors. So the image also reflects his positive psychological process, delivering the message of how comfort the products are. Fig. 3 is a product picture in which a LI-NING brand running shoe seems to be bounced up a spiraling air flow from underneath. The image of air flow is intentionally added as a vector, suggesting that the shoe has a unique elastic design.



Fig. 2 Picture of models in L store homepage ('narrative' and 'offer' type)



Fig. 3 Picture of products in L store homepage ('narrative' type)

2) If the image does not contain any vector, the visual structure is conceptual, representing participants in terms of their more generalized and more or less stable and timeless essence. Except for Group II, almost all images found in target web page convey conceptual meaning. Pictures of products

display the appearance and structure of the product; brand logo reflects the exclusive rights over brand names and trademarks; shopping icons point to indicative information commonly found in online shopping websites such as the shopping cart, favorite products and the store reliability stars. Nationality icons are unique in L store, which indicates the company’s global vision, and the language options provided to facilitate global buyers. This kind of images can provide consumers with stable, objective and *first-hand* information about the various online shop products and services without much words explanation.

According to context analysis, L store targets at global market and the major purpose of its homepage is to boost sales. So the product pictures should be given top priority. In addition, L store is supported by www.Aliexpress.com, with buyers mainly from countries like Russia, Brazil, America, Spain and France. Referring to cultural context model, these countries are inclined to the side of high-context countries, so people from these countries prefer objective, accurate and direct way of expression[1]. Table 1 shows that conceptual images are most frequently used with usage ratio *nearly up to 90% could be a proof* of the contextual consideration. Besides, with the booming of cross-border e-businesses, enterprises build better brand awareness to tackle the fierce competition. It is then understandable that L store embeds so many brand *logos* on the web page. But the use of nationality icons seems to be a waste of resources since www. Aliexpress.com already provides language alternatives on the front page.

**B. The interactive meaning**

The interactive image reflects the relationship between represented participants and viewers. The relationships are mainly depicted on four dimensions, the contact, social distance, attitude and modality.

1) Contact means an imaginary human relationship established by eye contacts between presented participants and viewers. When participants look directly at the viewers, contact is established, even if it is only on an imaginary level[4]. This kind of image is called a ‘demand’ image, which indicates the participants’ imaginary demands of something from the viewers. Otherwise, the image without any eye contacts between represented participants and viewers is called a kind of ‘offer’. Fig. 4 shows a picture that involves two main participants, the one walking in front has a direct eye contact with the readers, which seems to ask for readers’ attention and approval. Fig. 2 is a typical picture of ‘offer’, in which the model presented seems to enjoy him and do not know he is being watched.



Fig. 4 Picture of models in L store homepage (‘demand’ type) 90

Eye contact in real life is a cultural topic worth concerning. While in some cultures, looking directly into someone’s eyes is a *proof* of honesty and bravery, there are still many cultures that inhibit direct eye contacts during conversation. In this sense, ‘offer’ appears to be a better choice to fit into global markets. However, it is also important to note that the meaning of demanding or offering constructed by images are imaginary and is quite different from the interaction in real life. So it is hasty to conclude that ‘offer’ is better than ‘demand’ in cross-border e-business websites.

2) Social distance refers to the relationship between the participants and *viewers*, usually related to the size of frame. ‘close personal distance’ shows head and shoulders of the subject; ‘far personal distance’ cuts off the subject approximately at the waist; ‘close social distance’ shots approximately at the knees; ‘far social distance’ shows the full figure and ‘public distance’ shots the human figure occupies about half the height of the frame and anything ‘wider’ than that [4].

In daily life, the social distance is determined by social relations. The judgments apply within varied culture and misunderstandings can arise from intercultural differences in the interpretation of distance. According to the data (see Table II), L store portraits a ‘far social distance’ from the viewers. So that the buyer is close enough to browse the information of products presented and also maintain a decent business distance away from the seller.

TABLE II. SOCIAL DISTANCE DEPICTED BY IMAGES IN L STORE HOMEPAGE

	Close personal distance	Far personal distance	Close social distance	Far social distance	Public distance	Total
Pieces	0	1	4	13	0	18
Ratio	0	6%	22%	72%	0	100%

3) Attitude of image producers and the viewers (willingly involved) towards represented participants are implied by the selection of angles. The horizontal angel indicates that the image-producer is ‘involved’ (the frontal angel) or ‘detached’ (the oblique angle) with the represented participants[4]. The vertical angle depicts the power relationship between the represented participants and the viewer. *High angles* make the interactive participants (the image producer and the viewer) more powerful over the represented participants. The low angles depicted the represented participants as superiors who have power over the interactive participants. If the picture is at eye level, then there is not power difference involved. The image producer of L store has photographed almost all pictures at eye level and in frontal angles, and that implies mutual involvement and equal relationship between the sellers and buyers.

4) Modality is originally a term used by linguistics which refers to the truth value or credibility of statements about the world. According to G. Kress and van Leeuwen, Images can also represent people, places and things as though they are real(high modality) or not(low modality). Images presented in the home page of L store have high modality. So buyers can

totally rely on *this* visual information to choose products correspondingly, because it is natural and credible.

### C. The meaning of composition

Based on Visual Grammar, composition relates the representational and interactive meanings of the image to each other through three interrelated systems: information value, and framing. The information value is a meaningful positioning of elements, such as top and bottom, left and right, center and margin; salience assigns visual 'weight' to elements on the page, as realized by factors such as placement in the foreground or background, relative size, contrasts in tonal value, differences in sharpness, etc. framing is the use of various visual devices such as dividing lines or frame lines to connect or separate different elements of image.

The layout of L store follows the linear structure of top-bottom. The larger photo, functioning as narrative image, is a pictorial representation of the 'promise' of the product. For example, pictures of 'Newest Arrival' or '50% OFF' are normally placed on the top section. The picture of the product is smaller, and normally placed below the larger photograph, delivering more specific and practical information about the products. As far as salience is concerned, the top sections mean greater salience due to the vertically scrolling web page. Framing is achieved by the use of ads banners, the use of shapes, and the empty space between different sections. It is interesting if we look at the domestic website of the same company, that the center-margin structure is employed and the system of salience is frequently interrupted by the pop-out ads. These measures have proved effective in a high-context country like China, but they are unlikely to succeed in different cultures.

## IV. CONCLUSIONS

This paper attempted to build a basic framework to analyze the meaning constructed by images in cross-border e-business

websites. It helps people to develop better visual literacy. More importantly, it provides suggestions for cross-border e-business company in their website design: 1) Images make differences and contextual consideration should always be in the first place. 2) Social relationships between the sellers and the buyers can be implied through the use of vectors, size of frame, angles in images presented, and thus they could be appropriately used for different business purposes. 3) Companies from high context countries like China should avoid using center-margin layout when doing e-businesses with consumers from low context culture. Besides, color and framing of the website should also be simple and clear. On the other hand, there is still room for improvement in this research. For example, if more data can be collected both diachronically and synchronically, the findings could be more objective and convincing.

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