

# Multimodal Discourse Analysis of Public Service Posters on Low-Carbon Life

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Low-carbon living represents both a new lifestyle and an environmental responsibility vital for sustainable development, positioning it as a central theme in environmental public service advertisements (PSAs). This research employs a multimodal discourse analysis approach to examining eight public service posters advocating low-carbon living from Xinhua News Agency, primarily utilizing the visual grammar framework established by Kress and Van Leeuwen. The study explores these posters through three key perspectives: representational meaning, interactive meaning, and compositional meaning. By analyzing the interplay between visual and linguistic modalities, this research contributes to the overall understanding of public service posters and supports the promotion of China's low-carbon development initiatives.

*Keywords:* multimodal discourse analysis, visual grammar framework, public service posters

## Research Background

Traditional discourse analysis primarily relies on a single mode of language (Xin, 2008). Concentrating on the relationship between discourse structure, syntactic rules, and sentences, this approach tends to overlook other expressive forms such as images, sounds, colors, animations, spaces, and symbols (Zhang & Sun, 2015). However, as technology and academic disciplines have evolved, traditional discourse analysis has struggled to address contemporary communication needs, leading to the emergence of multimodal discourse analysis in the 1990s. Kress and Van Leeuwen (1996, 2006, 2020) were pioneers in this field, introducing the theory in their seminal work, *Reading Images: The Grammar of Visual Design*. They defined multimodality as encompassing all channels and mediums involved in communication. Currently, research in multimodal discourse analysis encompasses a broad spectrum of topics, including the visual grammar analysis of posters, documentaries, and videos (Cheng, 2024; Zhang, 2018; Zhou & Li, 2021).

On January 19, the State Council Information Office of the People's Republic of China (2023) released the official document titled *China's Green Development in the New Era*. This White Paper narrates China's efforts in promoting green development both domestically and internationally. It outlines the concepts, major

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initiatives, and historic achievements in advancing low-carbon development since the 18th National Congress of the Communist Party of China on November 8, 2012, and showcases the nation's commitment to pursuing a low-carbon and high-quality development path. In this context, major media outlets have responded to national policies by disseminating substantial news about low-carbon living. Public service posters in particular, have become a vivid significant medium for promoting public awareness of the “low-carbon life” through multimodal strategies to fully articulate meaning, enabling the audience to grasp the purpose and nuances of the discourse.

By examining public service posters, we can gain deeper insights into China's mainstream notion of green development, allowing readers to better comprehend the true intentions behind these visual communications. This paper employs the framework of visual grammar theory to analyze the representational, interactive, and compositional meanings of eight public service posters, exploring the language and imagery used in Chinese public service posters through the lens of multimodal visual grammar.

### **Theoretical Framework**

With the advancement of discourse analysis and technology, there has been a growing recognition of semiotic resources beyond language. Multimodal discourse analysis has emerged as a pivotal trend in discourse research, expanding its focus from traditional texts to include various multimodal semiotic elements such as visual, aural, gestural, and spatial components. This shift addresses the limitations of conventional discourse analysis. Halliday (1985) introduced Systemic Functional Grammar, asserting that language serves three metafunctions: ideational function, interpersonal function and textual function. This framework provides a robust theoretical foundation for multimodal discourse analysis.

Kress and Van Leeuwen (1996, 2006, 2020) conducted systematic analyses of various visual elements, including graphics, images, and symbols, culminating in the development of the concept of visual grammar. Within this framework, representational meaning aligns with ideational function, interactive meaning corresponds with interpersonal function, and compositional meaning relates to the textual function. The subsequent sections will discuss these three types of meaning within the visual grammar framework.

According to Kress and Van Leeuwen (1996, 2006, 2020), the representational meaning of images pertains to how symbolic modalities can depict objective entities and their relationships with the external world. This encompasses two categories: narrative representations and conceptual representations. Vectors serve as indicators of narrative representations, illustrating the interactions among participants within a narrative image. In linguistic terms, these interactions are conveyed through “action verbs”, whereas visually, they are represented by formally defining elements known as vectors. A narrative process entails a dynamic sequence in which actions, reactions, speeches, mental states, and transformations propel the event's progression. In contrast, conceptual representation focuses on the properties, categories, structures, and characteristics of an image, involving a static process that classifies participants and their relationships through analytical and symbolic processes.

Kress and Van Leeuwen (1996, 2006, 2020) defined interactive meaning as the interaction between the image's producer and viewer. This concept clarifies the relationship among the image, its viewer, and its producer. Interactive meaning comprises three fundamental elements: contact, social distance, and power

dynamics, which elucidate the interactions between the represented and interactive participants. Contact refers to the interpersonal relationship established through eye contact or gestures. If a represented participant looks directly at the viewer, the image conveys demanding information, suggesting that the participant is prompting the viewer to take action. Conversely, if the gaze is averted, the image offers information without obligation. Social distance can be classified into three types: long distance (indicating an unfamiliar or hierarchical relationship), medium distance (reflecting an objective relationship), and close distance (signifying intimacy). The power dynamics within an image are often conveyed through the shooting angle, categorized as horizontal and vertical. The horizontal angle illustrates the social relationship between participants, distinguishing between frontal and oblique perspectives based on their spatial positioning relative to the viewer. The vertical angle signifies power relationships, classified into flat, upward, and overhead angles, depending on the relative height of the participants.

Compositional meaning involves how the composition of an image relates its representational and interactive meanings through three interconnected systems: information value, salience, and framing, as articulated by Kress and Van Leeuwen (1996, 2006, 2020). These elements are applicable not only to the analysis of single images but also to the visual and textual examination of complex visuals. Information value is determined by the positioning of participants within the image, with established information typically on the left, new information on the right, desired information at the top, actual information at the bottom, critical information in the center and secondary information along the edges. Framing indicates how elements within an image are connected or separated, which can be influenced by color, borders, shape, and space. Strong framing is evident when elements are distinctly separated, while weak framing occurs when they are closely integrated. Salience refers to the emphasis placed on certain components of an image, achieved through various techniques such as positioning, relative size, color contrast, and differences in sharpness.

### **Visual Grammar Analysis of Public Service posters on Low-Carbon Life**

The corpus selected for this paper consists of eight public service posters promoting low-carbon living (see Table 1). These posters are sourced from Xinhua News Agency, China's national news agency. On July 12, 2023, coinciding with "National Low Carbon Day", Xinhua net (Chinese version) released a news article titled "Low Carbon Life, We Can Do It!" featuring both text and eight posters advocating for low-carbon lifestyles. Anchored in Kress and Van Leeuwen's visual grammar theory, this research delves into a detailed analysis of the posters, exploring their meaning construction across three dimensions: representational meaning, interactive meaning, and compositional meaning. The details of the eight Public Service Posters from Xinhua News Agency are in the following table.

Table 1  
The Eight Chinese Posters on Low-Carbon Life and Their Themes

Number	Poster 1	Poster 2	Poster 3	Poster 4	Poster 5	Poster 6	Poster 7	Poster 8
Themes	“Low-carbon commuting, green environmental protection”	“Plastic reduction, green consumption”	“Simplify ceremonies, oppose extravagance”	“Save electricity, turn off lights before you leave”	“Recycle Water, save water”	“Refuse Waste, have civilized Dining”	“Sort garbage, live low-carbon lifestyle”	“Work online, save paper”
Posters								

### Representational Meaning

The first analysis focuses on the representational meaning of these eight posters. In Poster 1, two central characters—a boy and a girl—are depicted directly engaging with the viewer while riding their bicycles, representing an active process. Their firm gazes imply curiosity about their destination, yet they appear happy as they journey forward, reflecting a positive reaction. The vectors of action are directed from the boy and girl to the objects in front of them, exemplifying a reactional process. In Poster 2, an environmentally friendly bag showcases various vegetables such as eggplants, peppers, and tomatoes, presenting a static process that emphasizes the importance of using cloth bags over plastic ones. Poster 3 features two men in suits shaking hands, illustrating both speech and action processes. Here, they serve as both active and passive participants, highlighting the simple pleasures that maintain workplace relationships amidst potential social pressures. In Poster 4, a lamp appears static but contains sprouting grass, emphasizing the importance of turning off lights to preserve life. Poster 5 shows a continuously flowing tap, an action process symbolizing the consequences of water wastage, complemented by a green cycle indicating the need for water recycling. In Poster 6, a girl beams while holding a finished plate, representing an action process that reflects daily food waste practices. Poster 7 depicts a family segregating rubbish into recycling, kitchen waste, and harmful waste, reinforcing the action process that promotes environmental protection. Finally, Poster 8 features a person engaged in an online conversation, illustrating both speech and action processes where participants are actively communicating.

Overall, the analysis reveals that action processes dominate, followed by speech, conversion, and reactional processes, with no mental processes present. This suggests that the posters aim to inspire practical actions aligned with their concepts, ultimately promoting a low-carbon lifestyle and a shared vision for a greener future.

### Interactive Meaning

Interactive meaning encompasses three fundamental elements: contact, social distance, and power relationships.

In Poster 1, two characters in the public service poster do not make eye contact with the viewer and lack direct interaction, presenting information in a more passive manner. The photographer employs a medium shot, maintaining a typical social distance between the characters and the viewer. The flat perspective conveys equality in their relationship, suggesting that everyone is welcome to participate. The poster promotes collective engagement in low-carbon living. Poster 2 features no characters, focusing instead on a cloth bag placed prominently in the foreground. This visual choice again leans toward information delivery. The close, flat angle of the shot minimizes the distance between the viewer and the object, prompting questions about the cloth bag's significance compared to plastic alternatives. The designer's choice likely underscores a message of "plastic reduction and green consumption". In Poster 3, two characters shake hands in a frontal view, reinforcing the theme of equality in their relationship. They do not engage in direct eye contact with the viewer, which aligns with the offering information approach. The medium shot captures their entire bodies, presenting them as approachable and competent, resonating with the poster's emphasis on simplicity and waste reduction. Poster 4 takes a close-up shot of a green light, with sprouting grass inside, which serves as an offering of information. The green light evokes feelings of familiarity and prompts viewers to consider energy conservation. The choice of light over a switch is intentional; it fosters awareness of electricity usage rather than just the action of turning it off. In Poster 5, a close-up shot depicts a continuously flowing water pipe, illustrating the importance of water conservation. While 70% of the planet is covered by oceans, freshwater resources are finite and must be protected for future generations. The poster highlights often-overlooked waste, encouraging viewers to recognize everyday actions, like reusing water from washing fruits and vegetables. Poster 6 features a young girl who, while not making direct eye contact, looks directly at the viewer, creating an interactive appeal for attention. Holding a clean plate, she symbolically urges viewers not to waste food, conveying the importance of finishing meals. The close and flat shot captures her gentle expression, fostering a sense of closeness. In Poster 7, a family of three makes eye contact with the viewer, actively engaging them. The photographer uses a head-on angle to depict the family sorting their trash, emphasizing the necessity of responsible waste management. The adults flanking the child convey the message that teaching children about recycling is vital for a healthier future. Poster 8 shows a man engaging in an online and chatting with four others. The absence of eye contact or direct interaction suggests a more informational approach. The oblique angle captures the essence of modern connectivity, highlighting how online activities—such as payments and shopping—have become integral to daily life.

Overall, the analysis of these eight posters reveals a predominance of informational content, primarily focusing on promoting low-carbon lifestyles. The use of close-up shots fosters a sense of intimacy, while flat perspectives convey equality in environmental stewardship. Collectively, these posters advocate for a shared commitment to sustainable living and green development.

### **Compositional Meaning**

Kress and Van Leeuwen (1996, 2006, 2020) analyzed how information is arranged within visual compositions, emphasizing the significance of the left and right positions for conveying given and new information, respectively. The top and bottom areas represent idealized and specific information, while the center is designated for the most crucial elements. In the context of eight posters, the central position is

paramount for delivering visual information effectively, making it the focal point where objects or people are prominently displayed.

All eight posters exhibit a top-and-bottom structure, with the designers opting to place given and new information in these areas rather than in the left and right positions. This approach ensures clarity, as public service posters should remain straightforward; positioning information on the sides could lead to visual clutter. Each poster features new information situated beneath the central elements, which, although they appear independent, are actually interconnected and vital for conveying the overarching message of promoting a low-carbon lifestyle. At the bottom of each poster, the publisher “Xinhua News Agency” and the series title “China in Color” are included. This textual information, while not the focus, is essential for context.

The overall framing of the posters is characterized by a dominant palette of blues and greens, and the textual elements are clearly separated, avoiding any overlap. This choice reinforces a strong visual structure. Yuan and Zhang (2012) highlighted that salience reflects how engaging the reproducing elements are for viewers, primarily through variations in font size, color, and spatial positioning. The two slogans, “Low-carbon travelling, green environmental protection” and “Actively respond to climate change and promote green low-carbon development” are strategically placed at the upper and lower ends of the central imagery. Notably, the first slogan is significantly larger, underscoring its importance and aligning with the representation of the central figures.

The top of each poster features the theme, “National Low Carbon Day”, along with the date “2023.7.12”, indicating the purpose of the poster: to encourage practices like cycling, using public transport, separating waste, and conserving water for the benefit of future generations. The white font color across the posters symbolizes purity and cleanliness, conveying that a low-carbon lifestyle leads to a cleaner, better world.

Regarding composition, the foreground of each poster focuses solely on the central characters or elements, with no distracting background features. This design choice emphasizes the central message of promoting a low-carbon life. The posters predominantly utilize light tones, which evoke a sense of joy, contrasting with darker colors that may induce feelings of oppression. This intentional use of light color not only reflects a positive outlook on the current living environment but also effectively promotes the ideals of low-carbon, energy-saving, and sustainable development.

## **Conclusion**

This paper employs Kress and Van Leeuwen’s theory of visual grammar to conduct a comprehensive analysis of eight public service posters promoting low-carbon living. The analysis focuses on representational meaning, interactive meaning, and compositional meaning, revealing that the posters balance these three aspects effectively. Through a combination of images, colors, and text, they convey the concept of low-carbon development to the nation.

The findings can be summarized as follows: First, the action process is most prominent in the representational meaning, suggesting that the primary aim of the posters is to encourage individuals to adopt the concepts presented and take practical actions. Second, the interactive meaning primarily utilizes informational offerings and close, flat shots, fostering a sense of familiarity that promotes the idea of low-carbon living. This approach intentionally engages viewers, eliciting a resonance with the visual resources

provided. Third, the main characters are strategically positioned at the center of the visual space, maximizing viewer attention to achieve specific communication goals in compositional meaning. Besides, posters are mostly in light color, reflecting an optimistic attitude on the current living environment and promoting the ideas of low-carbon and green development.

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