

Semiotic Rhetoric in Chinese and U.S. Environmental Public Service Advertising under the SDG Framework: A Comparative Study

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Abstract: Using the Sustainable Development Goals (SDGs) as an analytical framework and Saussurean semiotics as its theoretical basis, this study compares selected Chinese and U.S. environmental public service advertisements (PSAs). Official CCTV/China Media Group advertisements and Conservation International's Nature Is Speaking campaign are examined through four dimensions: linguistic, color, image, and auditory signs. The analysis shows that both sets of advertisements use multimodal coordination and objective visual representation to translate abstract sustainability goals into concrete environmental meanings. Chinese advertisements tend to use affirmative, everyday, and collectivist rhetoric, with brighter and warmer visual strategies and action-oriented narration. The U.S. cases more often adopt personification, warning-oriented language, lower-lightness imagery, and reflective narration to stress human dependence on nature. These differences are interpreted in relation to broader cultural and communication-context tendencies rather than as fixed national traits. The study highlights how SDG-related environmental communication can be adapted to different cultural contexts while maintaining a shared sustainability agenda.

Keywords: Sustainable Development Goals (SDGs); Environmental public service advertising; Cross-cultural communication; Semiotic rhetoric

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1. Research background and objectives

1.1. Research background

The adoption of *Transforming Our World: The 2030 Agenda for Sustainable Development* in 2015 placed environmental concerns within a common international framework of 17 Sustainable Development Goals (SDGs) ^[1]. Issues such as climate change, resource consumption, and ecological degradation are expressed in these goals at a policy level, but their relevance also needs to be understood in everyday life. Public communication provides one way of making this connection visible to wider audiences.

Public service advertising is particularly relevant in this respect because it brings public values into familiar media settings and relates institutional concerns to individual behavior ^[2]. Cross-cultural studies have also noted that environmental and social messages are not presented in exactly the same way in China and the United States. Chinese PSAs have often been discussed in relation to collective responsibility and relatively high-context forms of communication, while U.S. advertising tends to make its message more explicit and to give greater emphasis to individual agency ^[3]. Much of the existing work, however, examines either one national context or a particular type of sign. Less attention has been paid to how language, color, imagery, and sound work together when similar environmental concerns are communicated across the two contexts.

1.2. Research objectives

Against this background, the study compares selected Chinese and U.S. environmental PSAs through Saussurean semiotics. Attention is given to how linguistic, color, image, and auditory signs produce environmental meanings and how these meanings relate to the SDGs. The comparison also considers where the two groups of advertisements converge and where their rhetorical choices differ, with the aim of understanding how environmental messages are adapted to different communication contexts.

2. Theoretical framework and sample selection

2.1. Theoretical framework

Saussurean semiotics conceptualizes the sign as a relationship between the signifier, or perceptible form, and the signified, or conceptual meaning ^[4]. This framework has been used to analyze multimodal public service advertising because verbal language, color, imagery, and sound can all function as sign systems that generate meaning through combination and contrast ^[5].

The present study adopts a qualitative multimodal analysis. Linguistic signs are examined in terms of wording, pronouns, rhetorical devices, and value orientation; color signs in terms of warm/cool schemes, lightness, and hue contrast; image signs in terms of camera perspective, composition, and represented environmental elements; and auditory signs in terms of music, narration, and sound effects. The analysis also considers how these signs correspond to relevant SDGs, especially SDG 13 (Climate Action), together with goals concerning water, food, responsible consumption, and terrestrial ecosystems.

2.2. Sample selection

Samples were selected according to institutional credibility, representativeness, and relevance to the SDG period. The first Chinese case is China Media Group's *Green and Low-Carbon, Colorful China*, which focuses on low-carbon living and environmentally responsible everyday practices ^[6]. The second is *Green Living Starts with Me*, which emphasizes resource conservation, personal responsibility, and green lifestyles ^[7]. The U.S. cases are drawn from Conservation International's *Nature Is Speaking* campaign. *Mother Nature* personifies nature to emphasize human dependence on ecological systems and environmental responsibility ^[8]. *Sky* similarly uses personification to communicate concerns about pollution, climate instability, and ecological imbalance ^[9]. The main analytical period is 2015–2025; the 2014 film *Mother Nature* is retained as a foundational campaign text and interpreted retrospectively within the SDG framework.

Included advertisements had to focus clearly on environmental themes related to the SDGs, use a complete audiovisual format, and provide sufficient linguistic, visual, and auditory material for comparison.

The aim is not statistical representativeness but identification of typical semiotic-rhetorical patterns in authoritative environmental communication.

3. Analysis of linguistic, color, image, and auditory signs

3.1. Linguistic sign analysis

In Saussurean terms, linguistic signs connect verbal forms with socially constructed meanings. In environmental PSAs, language can make abstract sustainability goals actionable, define the relationship between humans and nature, and position audiences as responsible participants. The selected Chinese and U.S. cases share SDG-related themes but differ markedly in narrative voice and rhetorical tone.

3.1.1. Linguistic signs in Chinese environmental PSAs

The Chinese PSAs predominantly use advocative and everyday-oriented language. Green and Low-Carbon, Colorful China translates climate action into ordinary behaviors such as taking the stairs, while Green Living Starts with Me links food and water conservation to personal responsibility and the traditional virtue of thrift. In both cases, small individual actions are rhetorically connected to broader social development. This creates a collectivist logic in which environmental participation is presented as accessible, positive, and cumulative. The SDGs therefore function less as distant policy concepts than as a framework for interpreting routine practices such as saving water, reducing waste, and choosing lower-carbon behavior. The representative linguistic signifiers and their corresponding rhetorical functions are summarized in **Table 1**.

Table 1. Linguistic signs in the Chinese environmental PSAs

Advertisement	Representative signifiers	Meaning / rhetorical function
China Media Group, Green and Low-Carbon, Colorful China (2024)	“Does an environmentally friendly world have to be only green?”; “Take the stairs for lower floors”; “Green living gives the world more color.”	Low-carbon living is framed as diverse and accessible. Small daily actions can accumulate into collective environmental improvement, linking individual practice with SDGs 12 and 13.
China Media Group, Green Living Starts with Me (2024)	“We cherish every kernel”; “We care about every drop”; “Green living starts with me.”	Food and water conservation are linked to personal responsibility, shared ecological dependence, and the cultural virtue of thrift, corresponding especially to SDGs 2, 6, 12, and 13.

Note: Chinese PSA wording is presented in English translation for analytical consistency

3.1.2. Linguistic signs in U.S. environmental PSAs

The U.S. cases use a different linguistic strategy. Nature Is Speaking personifies natural systems and gives them a first-person voice. In Sky, pollution and climatic imbalance are expressed as bodily or psychological disturbance; in Mother Nature, statements such as “I don’t really need people. But people need me” reverse anthropocentric assumptions and stress human dependence on ecosystems. The language is concise, direct, and warning-oriented. Rather than instructing audiences through everyday actions, it uses philosophical confrontation to frame environmental degradation as a threat to human survival and to reinforce the urgency associated with climate and ecosystem protection. The representative linguistic signifiers and their rhetorical functions are summarized in **Table 2**.

Table 2. Linguistic signs in the U.S. environmental PSAs

Advertisement	Representative signifiers	Meaning / rhetorical function
Conservation International, Sky (2016)	“I am congested, off balance, polluted”; “I can’t even control myself anymore”; “In the end, I’ll be fine.”	The personified sky represents pollution and climate instability as a loss of ecological balance. Nature may endure over time, but human well-being remains vulnerable to environmental disruption.
Conservation International, Mother Nature (2014)	“I don’t really need people. But people need me”; “When I thrive, you thrive”; “Your actions will determine your fate. Not mine.”	The monologue reverses anthropocentric assumptions, foregrounds human dependence on ecosystems, and frames environmental protection as a matter of human survival and responsibility.

3.2. Color sign analysis

Color is an important perceptual resource that can influence viewers’ emotional responses and visual attention^[10]. In public service advertising, color also functions as a rhetorical and design element that helps shape the communicative atmosphere and the way environmental messages are received^[11]. In Saussurean terms, hue, saturation, and lightness function as signifiers whose meanings depend on their cultural and visual context. The selected advertisements show three recurring contrasts.

3.2.1. Warm and cool color schemes

A noticeable feature of the Chinese advertisements is their frequent use of comparatively warm tones. In *Green and Low-Carbon, Colorful China*, for example, beige, yellow, brown, and orange appear repeatedly. Rather than presenting environmental protection as a severe or distant issue, this palette gives low-carbon living a more familiar and approachable visual character. The *Nature Is Speaking* films create a different impression. Blue, green, white, and grey are more prominent, and they are usually tied closely to landscapes, weather, and other natural scenes. The resulting images feel cooler and more restrained, which fits the campaign’s stronger emphasis on ecological risk and observation.

3.2.2. Lightness

Brightness produces another clear distinction. Relatively pure and high-lightness colors are commonly associated with liveliness and visual attraction, whereas darker palettes can create a more restrained or tense atmosphere^[12]. This difference can be seen directly in the selected material. Sunlight and bright green vegetation in the Chinese advertisements give environmental protection an association with vitality and an improved everyday environment. Green is also easily recognized as a visual reference to vegetation and ecological life. The U.S. material makes greater use of grey or dimmer scenes when pollution or instability is represented. Here, reduced lightness does not merely change the appearance of the image; it makes environmental risk feel more immediate. The contrast suggests that the Chinese cases often visualize environmental action through optimism, while the U.S. cases more often rely on visual restraint to communicate urgency.

3.2.3. Hue contrast

Hue contrast is used in both groups of advertisements, although not for exactly the same purpose. Contrasting colors can draw attention to particular elements and increase visual expressiveness^[13]. In the Chinese conservation advertisement, yellow grain stands out against a cooler blue background. The combination connects food and abundance with a clean environmental setting. *Mother Nature*, by comparison, places

-muted yellow-brown landforms beside grey-blue tones. The contrast is less vivid, but it gives the landscape a sense of age, scale, and permanence. Thus, similar color relationships lead to different rhetorical effects: one encourages a positive association with conservation, while the other draws attention to the scale of nature and the vulnerability of human beings.

3.3. Image sign analysis

Objective camera perspectives appear repeatedly in both sets of advertisements. Unlike a subjective shot, an objective shot does not ask viewers to see through the eyes of a particular character; instead, they are placed in the position of observing the scene from outside ^[14]. This is useful in environmental advertising because issues that may otherwise remain abstract can be presented through visible and recognizable events.

The treatment of water in the CCTV material provides one example. Close shots make its movement, clarity, and texture noticeable, so the idea of water conservation associated with SDG 6 is grounded in something the viewer can actually see. *Sky* works differently but follows a comparable visual principle. Its aerial image of a hurricane gives climatic instability a specific form and connects it visually with the concerns of SDG 13. What differs most between the two groups is therefore not whether an objective perspective is used, but what surrounds that perspective. Chinese advertisements usually place such images within everyday and constructive narratives, whereas the U.S. campaign more often uses them to convey scale, instability, and threat. The same camera position can therefore support quite different persuasive effects.

3.4. Auditory sign analysis

Sound contributes to the advertisements in several ways, through music, environmental effects, and spoken narration. Background music can influence how a moving image is emotionally interpreted, while the spoken voice gives the visual material a more explicit direction ^[15].

In the CCTV advertisements, the soundtrack is generally light and rhythmic. Sounds associated with the scenes themselves—flowing water, moving plants, or a bicycle bell—are also retained or emphasized. The narration tends to move quickly from the image to a suggested action. The line “Practice thrift and conservation, starting with every small action; green living starts with me,” for instance, connects an ordinary personal choice with a broader environmental responsibility. In this way, the soundtrack keeps the environmental message close to everyday experience rather than presenting the SDGs as distant policy language.

The *Nature Is Speaking* films create a noticeably different listening experience. Their music is slower and deeper, while natural sounds often suggest scale or disturbance. The voice-over is also less instructional. In *Mother Nature*, the statement “When I thrive, you thrive. When I falter, you falter. Or worse” is presented as a warning about dependence rather than as a direct request for a particular behavior. Sound therefore reinforces a distinction already visible in the language and imagery: the Chinese cases tend to make participation feel practical and achievable, whereas the U.S. cases leave the audience with a stronger sense of consequence and vulnerability.

3.5. Summary and Recommendations

3.5.1. Commonalities and differences between the two sets of advertisements

Despite the differences discussed above, the Chinese and U.S. advertisements are similar in one important respect: environmental meaning is rarely carried by a single type of sign. Language, color, imagery, and

sound are usually combined. Images of water, landscapes, weather, and everyday behavior give viewers something concrete through which broader SDG concerns can be understood. The two groups therefore draw on a broadly shared environmental agenda, although they do not present that agenda in the same rhetorical form.

The clearest difference concerns how the audience is positioned. In the Chinese cases, sustainability is usually brought into ordinary life. Small actions are foregrounded, warmer or brighter colors appear frequently, and the soundtrack generally keeps the message encouraging rather than severe. The U.S. cases place greater weight on personified nature, direct warnings, subdued imagery, and slower narration. As a result, the audience is asked less often to follow a specific everyday instruction and more often to reflect on ecological limits and human dependence on natural systems.

Culture offers one possible way of reading these differences, although it should not be treated as a fixed explanation. Studies of Chinese public communication have linked it to collectivist orientations and an emphasis on social coordination ^[16]. U.S. communication has more often been discussed in relation to individual agency and direct expression ^[17]. The distinction between high- and low-context communication provides another useful reference point: symbolic association and indirect emotional cues tend to carry greater weight in relatively high-context communication, whereas more explicit verbalization is common in lower-context settings ^[18]. Visual traditions may likewise influence whether color is used more symbolically or naturalistically ^[19]. These ideas are therefore used here as interpretive aids rather than as rules that define all Chinese or U.S. advertising.

3.5.2. Recommendations

The findings suggest that the SDGs are most useful in environmental PSAs when they are translated into communication choices rather than simply displayed as policy concepts. A message becomes easier to understand when wording, images, color, and sound point in the same general direction, while still remaining familiar to the intended audience.

In a Chinese domestic context, broad environmental goals can be connected with recognizable practices such as saving water, avoiding food waste, or choosing lower-carbon forms of transport. Positive narration and familiar visual cues may help keep these behaviors within the audience's everyday frame of reference. Communication aimed at audiences accustomed to more explicit messages may need to state environmental risks and consequences more directly. This does not mean that one national style should simply be transferred to another. What matters is whether the degree of directness, visual treatment, and narrative tone suits the audience and the specific environmental issue. Image, sound, and narration should support one another, but they need not follow exactly the same formula in every cultural setting.

4. Limitations and future directions

4.1. Limitations

Several boundaries of the present analysis should be kept in mind. The cases come from official or well-established institutions, which makes them suitable for comparison but leaves out environmental advertising produced by commercial brands, independent creators, and users on other digital platforms. The study is also qualitative. Although several SDGs appear in the selected advertisements, SDG 13 receives the greatest attention because climate-related themes are especially visible in the material. A further limitation is that

the study examines the advertisements themselves rather than audience responses to them. The rhetorical differences identified here therefore indicate differences in communication strategy, not necessarily differences in persuasive effectiveness.

4.2. Future directions

A broader sample would make it possible to see whether the patterns found here remain visible across other producers, platforms, and national settings. Audience-based evidence would be equally useful. Surveys, experiments, or interviews could show whether viewers actually interpret particular verbal, visual, and auditory choices in the ways suggested by the semiotic analysis. Later studies might also include a wider range of SDGs rather than concentrating mainly on climate-related communication. Combining these approaches would allow future work to move from describing symbolic differences to examining how those differences are understood by audiences.

Disclosure statement

The authors declare no conflict of interest.

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