
International Journal of Marketing Semiotics & Discourse Studies

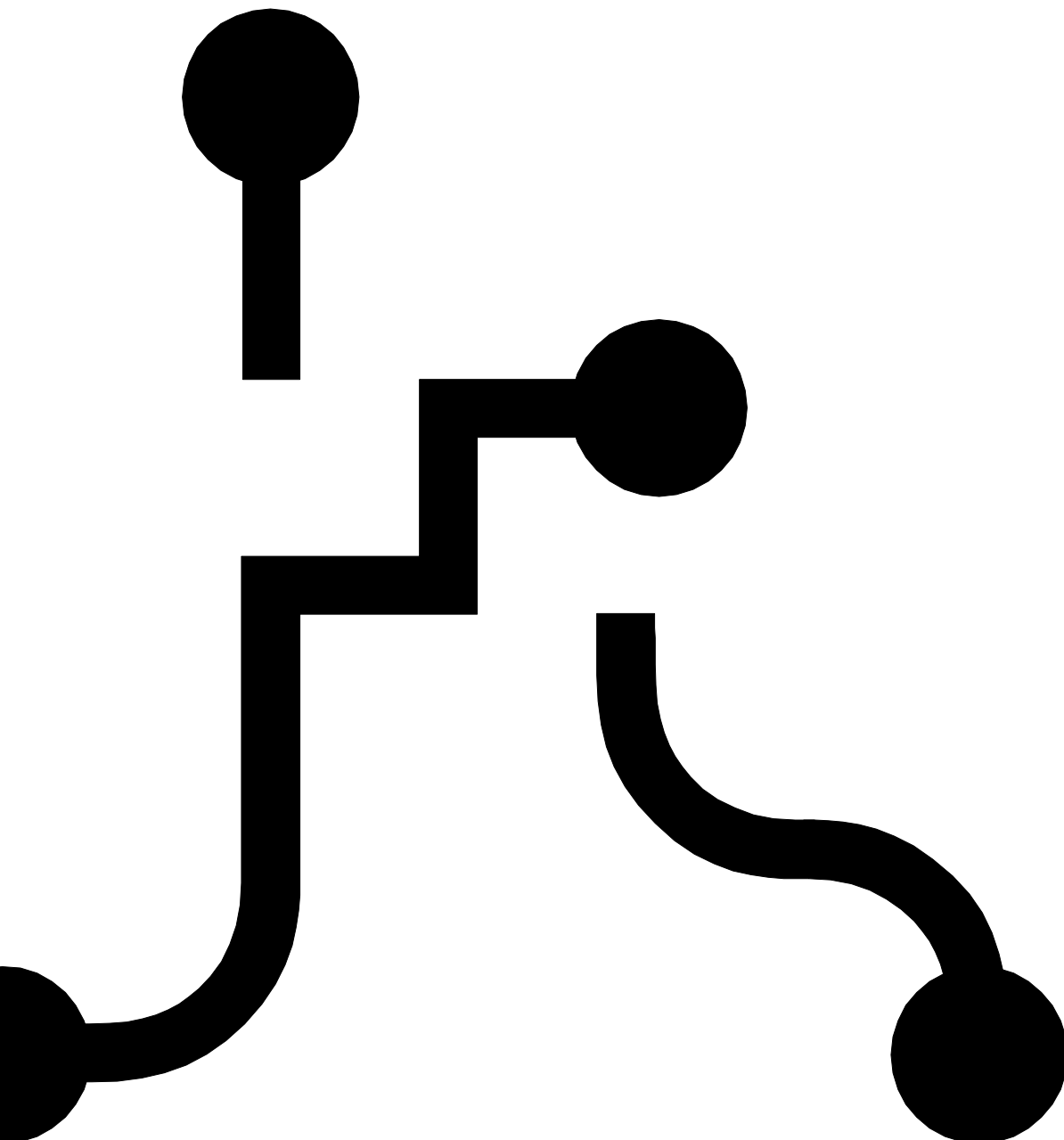
2025

Vol. 13

ISSN: 2195-2280

www.ijmarketingsemiotics.com

Ramona Pistol (2025). A sociosemiotic study of metaphorical ambiguity in sustainability advertising discourse. *International Journal of Marketing Semiotics & Discourse Studies* Vol. XIII, pp.1-28.



A sociosemiotic study of metaphorical ambiguity in sustainability advertising discourse

Ramona Pistol*, University of Hertfordshire, Media and Communication Department, UK
(email: r.pistol@herts.ac.uk)

Abstract

This paper examines the ambiguity of novel metaphors in advertising messages and the ways it can enhance audience engagement, analysing 25 metaphors from WRAP food waste reduction campaigns. Drawing on van Leeuwen's concept of "integrated design" and social semiotic approaches to multimodal analysis, this study investigates how metaphorical ambiguity is used to facilitate behavioral change through abductive reasoning. The analysis reveals that strategic ambiguity functions not as a communicative barrier, but rather as a semiotic resource that invites active meaning-making within specific sociocultural contexts. The findings demonstrate that effective behavioral change campaigns benefit from metaphors that transcend conventional associations through calculated semantic tension. This research contributes to the existing literature on advertising metaphors and practical campaign design in sustainability advertising discourse by showcasing how strategic ambiguity can enhance campaign effectiveness through the integration of multimodal semiotic resources.

Keywords: metaphor, advertising, sustainability, ambiguity, integrated design

*Dr. Ramona Pistol is an academic researcher and brand strategist whose work bridges philosophical inquiry with brand communication and reveals how emotional and aesthetic dimensions drive the creation of new meaning. Combining her marketing degree with professional experience in branding, she brings an interdisciplinary perspective to understanding how brands forge meaningful connections. Her doctoral research explored how novel meanings emerge through the interplay of cognitive processes, emotional dynamics, and semiotic systems.

0. Introduction

In both visual and linguistic formats, metaphors channel multiple messages and connotations that have been used in campaigns to combat food waste. Examples include presenting the Earth as a decaying orange with the message “wasting food feeds climate change” (Figure 1), written messages such as “Fight against food waste” and “my food feeds climate change” together with the globe in a bowl (Figure 2), or the image of leftovers on a plate whose half is filled with the picture of a blue earth (Figure 3).



Figure 1. Poster 2021 WRAP Love Food Hate Waste; Wasting food feeds climate change.



Figure 2. Banner WRAP Love Food Hate Waste; Our planet, our food.



Figure 3. Image from Google company news at blog.google, published by Michiel Bakker on 07th March 2022.

This empirical investigation examines how metaphors function in environmental behavior change communication by analyzing the visual and verbal metaphors used in WRAP's (Waste and Resources Action Programme) food waste reduction campaigns. Through a systematic analysis of campaign materials and using the methodological approach of integrated design, this research investigates the hypothesis that ambiguity in advertising processing is favourable to audience engagement. The methodological framework relies on a sociosemiotic analysis to

examine two key aspects: (i) how novel metaphors are used in these campaign materials, and (ii) how the ambiguity and multiple possible interpretations of these metaphors contribute to audience engagement. This integrated approach allows for a detailed examination of how visual and verbal elements work together to create meaning, while considering their environmental and social contexts.

The WRAP campaign serves as an ideal case study because its materials address the urgent global challenge of food waste reduction and frequently include metaphors to encourage a new way of thinking about food waste. Advertising campaigns are pertinent cases because their aim is to persuade and inspire thinking toward their desired direction. According to the UN's Food and Agriculture Organisation (2023), one-third of global food production goes to waste, making food waste reduction essential for achieving multiple sustainability targets (UN FAO, 2023). Food waste directly impacts several UN Sustainable Development Goals, particularly SDG 12 on Responsible Consumption and Production, which aims to halve global food waste per capita by 2030 through Target 12.3. Wasted food is also a priority in the advertising industry Ad Net Zero initiatives to respond to the climate emergency since advertising is ideally positioned to influence people's behaviour and reshape public understanding of food waste (Advertising Association, 2020). The complexity of food waste behavior means that information alone is not enough - campaigns must engage people emotionally and cognitively to create lasting change.

The power of metaphors to influence and change behaviour has already been acknowledged in advertising discourse (DeRosia 2008; McGuire, 2000; McQuarrie and Mick 1996). Levitt's (1981) belief that metaphors make the sale recognises the special role of metaphors in persuasion and reasoning, enabled by their ambiguity, openness to multiple interpretations and ability to create surprise and other reactions, which should become prominent in the current accounts of metaphors. In both visual and linguistic formats, metaphors are widely recognised as powerful ways to raise awareness, influence and change behaviour through their emotional appeal (Pérez Sobrino et al., 2021; Gkiouzepas and Hogg, 2011; Van Mulken et al., 2014), to channel multiple messages and connotations (McQuarrie and Phillips, 2005; Lagerwerf et al., 2012) and to make messages more engaging and memorable by requiring greater cognitive processing (Jeong, 2008) and engage the subconscious, where ninety five percent of decision making is happening (Zaltman, 2008). By focusing on a specific case study of food waste campaigns, this paper investigates how rhetorical deviation operates through the strategic deployment of ambiguous metaphorical constructions, using a methodological approach that combines textual analysis with visual semiotics to decode how these campaigns mediate environmental meaning-making. Building on McQuarrie and Mick's (1996, 2003) work on rhetorical deviation, this paper examines how the campaigns deliberate semantic

indeterminacy functions at both cognitive and sociocultural levels. Although research has acknowledged metaphors' reliance on ambiguity for creative effect (Kadry, 2016; Toncar and Munch, 2001), the relationship between metaphorical novelty and strategic ambiguity remains underexplored in sustainability advertising. Through detailed analysis of this campaign's multimodal elements, the paper explores the 'obscurity' in new metaphors and supplements the previous research into the ambiguity of metaphors by demonstrating how integrated design choices facilitate audience engagement while constructing environmental messaging. The aim is to answer the following question: What is the role of ambiguity in advertising messages when new metaphors are used? This paper argues that creativity is not rooted in a system of associations, but in hypotheses that contribute to engaging the audience and that interpretation occurs in an ambiguous and creative way as opposed to clear processes.

1. Theoretical issues of metaphor as inferences for creativity

The foundational theory around metaphors in advertising is the conceptual metaphor theory by Lakoff and Johnson (1980, 1999), which proposes that metaphors are not just rhetorical ornamentations, but reflections of how people conceptualize abstract concepts through associations with more concrete concepts and experiences. For example, the slogans: *Life. Have you got the stomach for it?* for pills, *Something for you and your cat to chew on* for Friskies, 'Transparent with a plastic body. No wonder it goes down well in Hollywood' for Evian water are considered to be reflections of how people understand the abstract concept of 'ideas' through the more concrete concept of 'food', that is the conventional metaphor IDEAS ARE FOOD (Lundmark, 2005).

Research in metaphoric advertising (McQuarrie and Mick, 1996; Phillips 1997; Gentner et al. 2001; Toncar and Munch 2001, van Mulken et al. 2014, Williamson, 1978) recognise metaphor as an indirect tool of marketing communications because its hidden, complex and sophisticated meaning must be decoded. It is well accepted that metaphors play a crucial role in perceiving the thoughts and sentiments of consumers, as well as understanding their behavior (Zaltman and Coulter, 1995).

While Lakoff and Johnson (1980: 55) assert that "metaphors can have the power to define reality" and function as persuasive instruments, predominant theoretical frameworks remain constrained by the analysis of metaphors primarily through analogical relationships. This analogical focus, predicated on clear conceptual mappings lacking cognitive dissonance, is inadequate when examining how ambiguous metaphors can generate exploratory cognitive engagement with complex issues such as food waste. This analysis acknowledges Conceptual Metaphor Theory's efficacy in explaining conventional metaphorical expressions that reflect

established patterns of metaphorical thought. However, Blending Theory provides a complementary analytical framework that is better suited to examining meaning generation in unconventional and novel metaphors. Specifically, Blending Theory accounts for metaphorical creativity that produces imaginative scenarios through the integration of multiple “mental spaces” into a “blended space”, well suited to explain ambiguity and how new meanings emerge. The emergent structure or the blending space represents the process of imaginatively developing relationships between ideas beyond direct projections from input spaces.

McQuarrie and Mick (2003) demonstrated that rhetorical figures enhanced advertisement recall even under incidental processing conditions, indicating increased attention grabbing. Rhetorical figures derive their persuasive power through deviance from linguistic and semantic conventions. This systematic deviation from dominant meanings necessitates heightened cognitive processing as audiences actively reconstruct intended messages (McQuarrie and Mick, 1996). The formal properties of these deviant structures enable advertisers to calibrate optimal engagement, making rhetorical devices particularly effective for overcoming audience indifference in advertising discourse.

In successful new metaphors, the cognitive process of exploring interpretive possibilities distinguishes them from more straightforward associations. The metaphor "Wasting Food Feeds Climate Change" exemplifies this through its deliberate ambiguity, which sustains continuous interpretive engagement. As a mechanism of cognition creation, metaphor is rooted in abduction. Pistol (2022) argues that new metaphorical meaning emerges through ongoing creative discovery rather than static conceptual mappings, aligning with Fauconnier and Turner's (2002, 2008) conceptual blending theory. Their notion of blending emphasizes the dynamic, emergent nature of meaning construction, where multiple conceptual spaces interact to generate new interpretations rather than simply accessing pre-stored semantic relationships. This initial step in the interpretation process is important when accounting for the cognitive processes of engaging the audience and should receive more attention in the discussions of metaphors in advertising. Studies have shown that the audience comprehends metaphors in advertising by first detecting common structures between source and target, then evaluating whether and how their knowledge of the two concepts matches based on those structures and finally inferring the most contextually relevant interpretation (Gentner et al., 2001; Dehay and Landwehr, 2019).

However, to decipher the ‘riddle’ posed by the metaphor, an interpreter must go through a process of identifying, considering, rejecting and accepting possibilities. If a metaphor loses its obscurity and no longer has the puzzle feature, it can raise no interest and no engagement. As Byron wrote: “I hate to hunt down a tired metaphor” (Don Juan, canto XIII, stanza 36),

meaning that metaphors can cease to contribute during their ossification into language and conceptualisation. Dehay and Landwehr (2019) point out that understanding metaphorical ads requires effortful cognitive processing, unlike straightforward ads. Only by engaging in this effortful processing can they resolve the initial disfluency caused by the ad's ambiguity and arrive at a possible 'aha' insight. They argue that a metaphor becomes 'resolved' when it produces the most positive audience responses and that is the 'aha' insight, but if a metaphor becomes clear in its meaning through a generalisation process of conceptual mapping structures, it also becomes conventionalised, losing all its surprising and enigmatic characteristic, which is what happens with many metaphors. To reach clarity in a metaphor means to end its life as a novel metaphor. It must be emphasised more often that metaphor is the logic of discovery and novelty discovery, rather than finding direct analogies reliant on familiar ideas. As Wu (2001) notes, the risk in a metaphor is a blessing in disguise, especially when a metaphor ferries us to a 'no logic' ocean where we sink or swim. The ambiguity that builds into the metaphorical process, if lost, can contribute to the loss of the power of the metaphor. The next section explains the ambiguity through the notion of 'abductive reasoning'.

2. Ambiguity in interpretation

Ambiguity in interpretation is an everyday experience and although it can be the source of misunderstanding, it is also a source of jokes (Arrighi and Ferrario, 2008) and new meanings (Empson, 1930; Ricoeur, 1977; and Black, 1955, 1962). From a theoretical perspective, ambiguity in meaning can be explained by the concept of 'abduction' as a form of syllogism because, unlike deductive and inductive logic, abductive reasoning explains how novelty is represented and shaped into knowledge. As one of the three ways of human reasoning, abduction is a process of guessing or generating new hypotheses based on the observation of a surprising or anomalous fact. Hence, novel metaphors in advertising can create a sense of surprise or cognitive dissonance that leads audiences to re-examine their assumptions and create new hypotheses. In contrast, deductive reasoning, based on established premises, fails to generate compelling advertising by merely recombining conventional market knowledge. This approach produces predictable outcomes that oppose the creative deviation necessary for raising curiosity, lingering of meaning and making the mind wonder, a process that can increase engagement levels. Peirce (CP. 2.636) distinguished abduction from induction, stating that while induction serves classification purposes, abductive processes are specifically designed to interpret signs through fallible insights. He argued that interpretation is based on abductive reasoning, which is our basic means of understanding the world. The abductive process is metaphorical thinking, as new metaphors reveal the resemblance between concepts and enable interpreters to create novel possibilities for meaning.

In examining mechanisms of audience engagement, Gonzalez and Haselager's (2005) theoretical framework on creativity and abductive reasoning offers compelling insights into the function of ambiguity in communication. Their analysis of surprise and abductive reasoning elucidates how encountering ambiguous stimuli initiates sophisticated cognitive processes. When faced with interpretive uncertainty, individuals engage in what the authors call abductive systems, which "develop the ability of creating expectations and perform actions guided by them" (Gonzalez and Haselager, 2005: 338). This cognitive engagement manifests itself as audiences actively work to resolve semantic ambiguities. Their conceptualization of belief disruption is particularly salient, positing that creative systems must "step out of problematic situations to realize constraints exist" (Gonzalez and Haselager, 2005: 341). This theoretical perspective illuminates how strategic ambiguity functions to productively destabilize audience presuppositions, compelling deeper engagement with message content through active examination of interpretive frameworks. Furthermore, their exposition of self-organization in response to perturbation provides a sophisticated model for understanding audience meaning-making processes. This process is viewed as a "continuous process of breaking up habits and acquiring new ones" (Gonzalez and Haselager, 2005: 341), suggesting that ambiguity catalyzes active interpretation rather than passive reception. This dynamic process of meaning construction, triggered by strategic ambiguity, facilitates sustained cognitive engagement rather than immediate resolution. This theoretical framework substantiates ambiguity's role not as a communicative impediment but as a mechanism for fostering deeper audience engagement through active meaning construction and interpretive challenge.

Engaging an audience is often achieved through humor and puzzles, elements that new metaphors are particularly effective at delivering. Metaphors add new knowledge and fresh meaning, which Eco (1984) refers to as the cognitive value of metaphor. As arbitrary, open-ended and unpredictable, abduction is the drive of the formation of metaphor, which should be more directly acknowledged when theorising metaphors as the building blocks of our reasoning. New metaphors inherently contain ambiguity as their interpretation must happen in non-literal ways and many offer multiple possible interpretations. In these instances, the abductive process results in several competing or parallel hypotheses, requiring further abduction to determine the most like meaning. Therefore, the *ambiguity* of metaphors necessitates abductive reasoning to arrive at meaning. However, the abductive process itself results in *ambiguity*, as there can be a multiplicity of meaning.

The definitions of reasoning in general consider arguments and conclusions that are mutually reinforcing (Evans, 2007; Kahneman, 2003; Cobley, 2010; 2018; Mercier and Sperber, 2011). Mercier and Sperber (2011) describe this process in detail when discussing argumentative

reasoning as a discovery of statements to support a given conclusion. As Wiles (2011) points out, what Mercier and Sperber argue to be a discovery process can be a form of abductive reasoning, which can be seen in navigational systems that can exploit abductive reasoning to construct a cognitive map, rather than using just analogous to deductive reasoning. Johnson (2018) builds on Flanagan and William's (2010) argument that we do not derive 'ought' from 'is' or norms from factual statements, but rather from working hypotheses. Similarly, advertising executive Rory Sutherland (2019: 121) argues that effective and powerful messages must contain some absurdity, difficulty or extravagances because rational talk creates no meaning and has no persuasive power. Furthermore, Sutherland argues that what is illogical attracts the attention of the subconscious and creates meaning.

Sutherland makes a concise but rather insightful remark on *ambiguity* by pointing out that non-sense, which "includes things that are useful or effective even though (or perhaps because) they defy conventional" (2019: 25) meaning, can be more emotionally rewarding. An example of non-sense is when an advertising campaign for an airline focuses on food that might be served on board without even showing an aircraft at all, leaving interpreters to infer about safety and quality of the flight experience from on board catering. He contends that less focus should be given to rational decision making which are often models of simplistic logic that dominate decision making, when often irrational factors are more impactful on human behaviour. Most importantly, surprise and making experiences enjoyable can push people towards action. Logic can have only a direct connection between reason and action, which does not have the power to influence and change behaviour. Sutherland (2019: 56) argues that Colgate's slogan 'the ring of confidence' was ingenious because it was ambiguous. On one level it referred to the confidence parents feel when taking their children to the dentist, but the phrase also implied that using Colgate can boost emotional confidence. By keeping the message vague, the slogan worked on both rational and emotional levels without having to spell anything out explicitly.

Behavioral change campaigns require novel cognitive frameworks or ways of thinking, because established thought patterns often impede transformative insights. This principle is particularly evident in the context of food waste reduction initiatives, in which conventional thinking patterns may perpetuate wasteful behaviors. Abductive reasoning becomes important in campaigns because it allows for novel insights by taking an imaginative perspective. A change in behaviour to reduce food waste requires a new way to think about it. Innovations in thinking can only occur by bringing two unrelated concepts together to form a new idea, which is what a metaphor does. Drawing from Gonzalez and Haselager's (2005) analysis of abductive reasoning and creativity, there is compelling evidence that innovative metaphorical constructions can catalyze behavioral transformation. Creative problem-solving is believed to

emerge when “well-established beliefs” are productively disrupted by novel stimuli (Gonzalez and Haselager, 2005: 338). In campaign messaging, metaphorical juxtapositions serve this disruptive function by challenging entrenched perspectives. The “self-organizing process” they describe, where new cognitive patterns emerge from the interaction of previously unrelated concepts, provides theoretical grounding for how metaphorical thinking drives behavioral innovation. Martin (2022) argues that a method for creating persuasive narratives is to transform problems into possibilities. He recognizes the power of metaphor to help consumers understand and relate to new ideas and points out that “a well-crafted metaphor reinforces all three elements of persuasion”: ethos, logos, and pathos (2022: 74). Thus, the impact that metaphors have on the interpretation of messages in campaigns is set up by guesses or abductive reasoning, which have an important role in understanding new ideas.

3. Data and methods

To illustrate how novel metaphors are used to engage interpreters in advertising, a total of 25 new metaphors have been retrieved from 4 campaigns for reducing food waste initiated by the Waste and Resources Action Programme (WRAP) between 2018 and 2023 (See Table 1). The campaigns are Love Food Hate Waste, which include the Food Waste action week in March 2021 to 2023 and Keep Crushing it campaign, and Guardians of Grub (WRAP’s food waste reduction campaign targeted at hospitality and food service outlets). The examples presented below include metaphors in both linguistic and visual modes. The newness of the linguistic metaphors was established using the NOW corpus (News on the Web), by which the frequency and earliest occurrences of specific metaphors was examined. For pictorial metaphors, novelty assessment involved a systematic visual analysis using picture searches on multiple search engines (Google Images and Bing Images) to trace identical and visually similar images. Novel images were defined as those without direct visual precedents in sustainability advertising, while acknowledging that elements of the visual composition might appear in other contexts. While approaches to metaphor novelty assessment exist (Parde and Nielsen, 2018), these methods struggle to detect unique nuances like ambiguity, which has been acknowledged as useful for predicting metaphor newness.

The methodological approach includes an analysis based on the concept of “integrated design” or “new writing” (van Leeuwen 2008; Ledin and Machin 2018, Machin and Copley, 2020), a new framework for analysing multimodal communication, facilitated by digital technologies. The approach relies on “the way that the kinds of causalities, identities and connections formerly made in running text are now made using combinations of chunks of text, bullet lists, combined with images, graphics, colours and other semiotic resources.” (Ledin and Machin 2018: 23). The framework allows for an examination of how the elements work together to

create coherent meaning systems rather than analyzing them in isolation, allowing for the recognition that meaning emerges from the interplay between these elements, not just their individual contributions, and allowing for an increased control of semiotic materials and resources. In the analysis of the campaign messages transmitted through metaphors, attention is given not only to the isolated metaphors found in text, but also to the images that accompany them and how the parts work together to engage the audience. Integrated design methodology presents a particularly appropriate framework for analyzing visual and textual metaphors in advertising campaigns because it recognises how digital technologies have transformed multimodal communication (Ledin and Machin 2018: 23). Van Leewen and Kress (2006) advocate for giving visual communication equal analytical weight as linguistic forms, challenging Barthes' (1967) view that "the meaning of images (and of other semiotic codes) is always related to, and in a sense, depended on verbal text". As Bateman (2016) points out, the socio-semiotic framework provides analytical tools for examining complex multimodal communication within contemporary media culture.

Furthermore, the "integrated design" helped discuss ambiguity in metaphors, which remains a problem in scoring metaphor novelty. This study relied on an interpretative approach, considering new metaphors as inferential processes created out of hypotheses through the use of imagination, rather than clear associations between two ideas. This methodological framework enabled the analysis of how different semiotic modes interact to create meaning through ambiguity and polysemy in behavioral change campaigns for sustainability goals. This interpretative dimension is particularly salient when examining how metaphorical meanings are constructed and transmitted across different modes of communication. The methodology acknowledges that meanings are not fixed entities but are rather negotiated through cultural contexts and interpretations. Unlike content analysis, which categorizes texts across predefined variables to identify patterns, semiotic analysis is a qualitative method that takes an interpretive approach similar to art criticism, investigating both denotative and connotative meanings within individual texts rather than analyzing broad patterns across multiple texts (Bell, 2004).

The integration of different semiotic resources in campaign messages can be understood through the layered meaning framework, in which both denotative and connotative interpretations work in concert across multiple modes of communication. When analyzing metaphors in campaign materials, it was considered how the representational layer of meaning (what we directly see in texts and images) interacts with symbolic interpretations across all elements. For instance, a metaphorical phrase does not exist in isolation - its meaning is reinforced, expanded, or sometimes even transformed by accompanying visual elements,

colors, and graphic design choices. Each of these components contributes both denotative elements and connotative meanings and their cultural and symbolic associations, which are deliberately integrated to create a cohesive message that resonates with audiences on multiple levels. This multimodal approach to meaning-making reflects how modern communication design consciously weaves different semiotic resources to enhance engagement and message effectiveness.

The ultimate power that metaphors have in advertising can be recognised in many of the campaigns initiated by the Waste and Resources Action Programme (WRAP) in the UK, which include Love Food Hate Waste, Food Waste Action Week, Keep Crushing It and Guardians of Grub. The analysis focuses on the metaphors used in three campaigns, *Food Waste Action Week* as part of the *Love Food Hate Waste Brand and Campaign*, *Love Food Hate Waste campaign – Keep Crushing It*, and *The Guardians of Grub campaign* (Table 1).

Table 1. Metaphors grouped by campaign

Campaign name and source	Text Metaphors	Visual metaphors
<p>'Love Food Hate Waste' https://www.lovefoodhatewaste.com/ which include:</p> <p>the 'Food Waste action week' in March 2021 to 2023 https://www.lovefoodhatewaste.com/take-action-save-food/food-waste-action-week and 'Keep Crushing it' campaign https://wrap.org.uk/taking-action/citizen-behaviour-change/collection/keep-crushing-it</p>	<p>Food is precious; Make your food go further; It's a date!; Snap a shelfie; Ice-cube tray -the freezer hero; Unidentified Frozen Objects; Freezy does it'; Defrost like a boss'; Conquer the cupboard; Boss it; Let's keep crushing it; Chill the fridge out; Money saving magic; Don't be bananas; Don't be a lemon; Get your skates on; Love Food, Hate Waste.</p>	<p>Figure 5 Figure 6</p>
<p>Guardians of Grub (WRAP's food waste reduction campaign targeted at hospitality and food service outlets) https://guardiansofgrub.com/resources/</p>	<p>Guardians of grub; Feed the bottom line, not the bin; Raise up against food waste; Use every drop of your smarts and every ounce of your skills to make sure food stays food;</p>	<p>Figure 7</p>

3.1 Research questions

Research Question 1: How do metaphorical constructions operate across different semiotic modes in sustainability advertising campaigns?

Research Question 2: What role does metaphorical ambiguity play in the construction of sustainability messages?

Research Question 3: How are new visual and textual metaphors integrated to create meaning in sustainability advertising?

To address these questions, this study employed a multimodal discourse analysis framework by examining a corpus of sustainability advertising campaigns (Table 1).

4. Analysis and discussion

This study examined the operational dynamics of metaphorical constructions in food sustainability advertising campaigns, focusing on their multimodal integration and role in meaning-making. The analysis of the campaign reveals a sophisticated interplay between visual and verbal semiotic modes in the use of novel metaphors, particularly evident in how the campaigns deploy multiple semiotic resources to construct meaning and engage audiences.

4.1 Multimodal metaphorical operations

Food Waste Action Week is an annual campaign run every March by *Love Food Hate Waste* and brings together businesses, governments organisations and other partners to implement lasting behaviour change actions that enable people to live more sustainably and be conscious consumers (WRAP, 2023). The theme of the Food Waste Action Week 2023 campaign was *Win. Don't Bin*, and the results show that 61% of people who became aware of the campaign also took action to increase consumption over waste (WRAP UK, 2023). The campaigns demonstrate what Ledin and Machin (2018) call “semiotic dissonance” through deliberate tension between visual and verbal elements. This is particularly evident in the “Love Food Hate Waste” campaign (Love Food Hate Waste, 2023) in which familiar phrases are recontextualized in unexpected ways, such as “It's a date!” and “snap a shelfie”. The ambiguity emerges from the integration of food waste messaging into popular cultural references.

Machin and Ledin (2020: 95) demonstrate how integrated design serves as a crucial communicative vehicle in contemporary consumer culture, encoding consumption choices with moral and political significance. Through this multimodal approach, even routine purchases like coffee are imbued with broader social and ecological significance, transforming mundane

consumption into performative acts of environmental consciousness. This framing demonstrates how integrated design strategies effectively merge commercial and ethical dimensions of consumption, making the act of buying simultaneously a personal, political, and environmental statement. This strategic use of integrated design is evident in how environmental metaphors are constructed and communicated. For instance, a comparison of two metaphors about food waste reveals how different semiotic constructions can influence engagement and interpretation. While “food is precious” is a conventional metaphor with limited transformative power, “make your food go further” offers a more dynamic interpretation. The latter metaphor’s effectiveness stems from its active components: the verb “make” encourages agency, while “go further” suggests resourcefulness and maximization of available resources.

In a similar way, the metaphor “food is precious” might not be too striking, as food being framed as valuable is closely related to the core belief that food is essential for survival, and the metaphor does not have the power to shift people’s mindsets around food and its importance. In comparison, “make your food go further” has the power to promote the concept of using all edible food given by the active verb “make” which encourages agency and “go further” which communicates maximising what is available, encourage variety like stretching ingredients to create several meals. The open-ended nature of this metaphor allows the audience to envision their own solutions, thus supporting autonomous motivation according to self-determination theory (Ryan and Deci, 2000). The visual imagery of “making food go further” promotes being resourceful and deliberate acquisition of value and prevention of waste. The hypotheses given by this metaphor are richer than of “food is precious”. Through integrated design strategies, everyday consumption choices are framed as acts of environmental responsibility, ensuring that the message is communicated across multiple semiotic modes, thus making it more accessible and memorable.

The metaphor’s effectiveness derives from its establishment of an interactive system between two distinct conceptual domains: food consumption and physical journey progression. In accordance with Black’s (1962) interactive view of metaphor, these domains engage in a complex interplay of associated implications and connotations, generating emergent meaning structures that extend beyond simple one-to-one mappings. Sutherland (2019) remarks that logic might not always be the way to reach a conclusion but, rather to explain a decision. For metaphor this means that creative ambiguity generates fresh cognitive potential to change behaviour. “Make your food go further” makes a non-obvious connection between stretching food and progressing on a journey. This creative linkage frames food waste as a failure to fully use the ‘mileage’ of ingredients and abductively reframes food perceptions as an exercise in

imagination and skill. By shifting the frame from food waste as a current habit to an exciting challenge to maximize food 'distance', the metaphor sparks curiosity and competitiveness with oneself. Rather than functioning as a simple substitution mechanism, the metaphor creates a novel conceptual framework that enables fresh perspectives on food waste and culinary competence. The new meaning aligns with Black's emphasis on how metaphorical interaction generates new patterns of implications that extend beyond the familiar meanings of constituent terms.

4.2 Strategic use of metaphorical ambiguity

The statement "Wasting food feeds climate change" serves as a stark reminder of the consequences of food waste, yet it is presented in a way that can be interpreted differently by various audiences, depending on their awareness and beliefs about climate change. This layered messaging is a hallmark of integrated design, in which visual and textual elements work together to create a cohesive yet open-ended narrative, allowing for an increased management of semiotic elements. Ultimately, the ambiguity in advertising messages with new metaphors such as "make your food go further", "it's a date!", "ice-cube tray -the freezer hero", enhances their effectiveness by allowing for diverse interpretations and encouraging deeper engagement with the idea of saving food from waste.

Campaigns function as communication mechanisms that prioritize cognitive engagement over behavioral modification, operating primarily to initiate reasoning processes by focusing on awareness cultivation, attitudinal transformation, and behavioral intentions (Jenkins et al., 2022). Their effectiveness is typically measured through engagement metrics rather than behavioral outcomes, positioning them as catalysts for cognitive processing rather than direct instruments of behavioral change. The Food Waste Action Week from 2022 with the main message "wasting food feeds climate change" resulted in 55% of people in the UK who knew about the campaign saying they did something about food waste (WRAP UK, 2023). Consequently, Love Food Hate Waste asked the public to share their own UFOs (*Unidentified Frozen Objects*) on social media, using the hashtag #FoodWasteActionWeek to encourage labelling the food we freeze as the result of the survey findings that many households could not identify their frozen food.

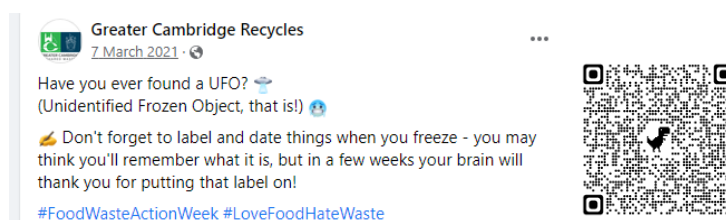


Figure 4. Facebook post for UFO

Unidentified Frozen Objects humorously compares forgetting about frozen foods that have been left in the freezer for so long that you no longer know what they are, to encountering unexplained phenomena of unidentified flying objects (UFOs). The use of the metaphor evokes imagery of strange, icy objects and highlights the experience of having mystery items in the freezer. The generated ambiguity invites the interpreter to consider a number of hypotheses or employ abductive reasoning. The comparison of wasteful frozen food habits to discovering UFOs creates an exaggerated, amusing image to capture attention and remain memorable, which has an element of ambiguity by comparing forgotten frozen foods to supernatural phenomenon. Considering Attardo's (2001) argument that the pleasure of humour often derives from resolving incongruities through inference making, it can be hypothesised that the audience abductively bridges the gap between what is believed to be the settled meaning of 'aliens' and the figurative, wasted 'alien' frozen items. Because UFOs witnesses remain disputed, the interpretation must rely on an imaginary situation likely based on cultural perceptions and ideas emanating from aliens' films, books, and documentaries. This metaphor projects an imaginative, humorous understanding of food waste onto the audience's conception of their own freezing habits, which supports the widely accepted view that metaphors interpretation involves imaginative processes (Gibbs, 2005; Pistol, 2022, Fauconnier and Turner, 2002) and further thought and personal reflection generated by metaphor's ambiguity (Muller, 2008).

Drawing upon conceptual blending theory (Fauconnier and Turner, 2002, 2008), the metaphor "unidentified frozen object" is a good example of how creative meaning emerges through the integration of multiple mental spaces to achieve specific persuasive objectives. The metaphorical blend merges elements from the domain of UFO phenomena with freezer organization practices, generating a novel emergent structure that transcends simple domain mapping. This integration network activates multiple interpretative possibilities: the obscurity of UFOs maps onto forgotten freezer contents, while extraterrestrial investigation maps onto domestic food management. Within the context of #FoodWasteActionWeek (Love Food Hate Waste, 2023), this blend serves clear goals of persuasion, raising interest regarding food waste reduction and motivating people to be more conscious about organising their freezer and using older frozen food. The emergent structure generates cognitive implications beyond the input spaces. While the metaphor's humorous surface structure engages through cognitive pleasure, its deeper blended meaning prompts critical reflection on the practice of freezer organization. The blend attracts a deliberate exploitation of ambiguity that maintains cognitive engagement by maintaining the thinking process active, rather than coming to a conclusion immediately. The interaction of the input spaces allows for navigating between potential meanings - disorganization, neglect, mystery, investigation – helping to actively construct

understanding through the interaction of input spaces. The effectiveness of the metaphor relies on maintaining these multiple interpretative possibilities, demonstrating how metaphorical creativity can serve specific rhetorical objectives while sustaining engagement through strategic ambiguity. The metaphor “Feed the bottom line, not the bin” is ambiguous in its dual meaning, because it appeals to both financial concerns (saving money) and ethical concerns (reducing waste).

Studies in consumer psychology (Yorkston and Menon, 2004, Johar et al., 2006) posit a dual process model of consumer judgment, suggesting that people process advertising through two sequential stages: first, an automatic stage where they respond spontaneously to basic features like color and style, and second, a deliberative stage where these initial judgments are consciously processed and refined. Thus, both automatic and conscious cognitive processes play significant roles in how consumers evaluate advertisements and products. Additionally, metaphorical ambiguity can function as a mechanism that deliberately extends and intensifies the deliberative phase of cognitive processing.

Escalas (2004) argues that what truly links a brand to the self is how the consumer interprets the story and translates the experience into their own narrative, an idea that can be extended for campaigns that target behavioural change. For example, in a series of posters WRAP (2020) included the metaphors: “don't be bananas”, “don't be a lemon”, and “get your skates on” to encourage a new way of thinking of not wasting food. The metaphor “don't be bananas” is used as a persuasive tool for not wasting food by implying that people should not act irrationally and by emphasizing the need of being responsible with food. Building on the expression “go or be bananas” which is an informal way to mean silly or be mad, the metaphor refers to how bananas may quickly become overripe and inedible, which is a significant source of food waste. To highlight the importance of being smart, “Don't be a lemon” which can be the slang for being useless and defective is accompanied by the image of a fruit that can suggest sourness and difficulty. The relationship between creativity and novelty in these metaphorical constructions relies on the analogy between people and food in contemporary discourse, but the established prevalence of the analogy is not enough to exhibit the new and creative elements.

Following the model of conceptual metaphor theory (Lakoff and Johnson, 1999), the source domain of food is used in such examples to represent people and the main metaphor that our thinking is based on is PEOPLE ARE FOOD. The properties of fruits such as bananas and lemons are applied to people as personality traits. However, the metaphor ‘get your skates on’ might not have the same clarity in identifying the mapping between the two concepts because the metaphor is used as an encouragement to take action quickly and efficiently to prevent

food waste. The persuasive power of the message derives from more than just the information it reveals. Skates are used for speedy mobility, an idea which is used by WRAP to suggest acting fast and taking proactive measures to reduce food waste and hence building on the similarity. Similarly, when discussing food from the industry perspective, Sutherland (2011: 40) argues that “we lost sight of the reasons we value food at all” when thinking about food is only logical, since food is often a pleasurable experience. Moreover, Irwansyah (2024) investigated the semiotic dynamics within foodscapes, particularly focusing on the interaction between culinary actors and their environment in generating linguistic resources. The findings emphasize the critical role of multimodal semiotic resources, encompassing linguistic, visual, symbolic, and chromatic elements, in preserving traditional culinary heritage. This research demonstrates that food production and commerce transcend physical products, incorporating historical narratives and cultural significance.

While similarity provides the foundational basis for metaphorical construction, it does not constitute the primary mechanism through which metaphorical creativity emerges. Creative metaphors are characterised by the possibility of being endless and evasive because they are a process of a play that undermines conventional meaning, as Derrida (1974) argues. How we understand meaning in such instances involves a prolonged process of questioning and subverting assumptions, a play of signifiers in a constant movement in Derrida’s terms. The wondering about metaphor is done with the retrieval of the proper name: “metaphor also opens the wondering of the semantic” (Derrida, 1974: 241), making it possible for meaning to be a constant wondering. Nevertheless, if an advertiser meets the sweet spot of optimal metaphoric complexity, consumers experience pleasure and reward when solving the “riddle” posed by the metaphor (Dehay and Landwehr, 2019: 12). The metaphor “My food feeds climate change” (Figure 2) exemplifies this phenomenon, particularly for audiences with limited environmental awareness, as it establishes an unusual causal relationship between food and climate change that needs deciphering. The new connection between food and climate creates what the literature presents as a cognitive puzzle. The metaphor raises questions about how food choices and habits could contribute to climate change, exemplifying Larson’s (2011: 4) claim that “metaphoric ambiguity may actually be a fertile source of inquiry” because the tension that the metaphor creates forces looking beyond stabilised meaning. Black’s (1955: 537) interactive model of metaphor provides a theoretical foundation for understanding this cognitive tension. His framework posits that meaning emerges through the dynamic interaction between two distinct conceptual domains, rather than through simple substitution. The meaning produced through interaction is new because the frame (the context) demands an extension of the meaning of the focus (the term being used metaphorically). Metaphorical ambiguity appears to play a crucial role in engaging probably diverse audiences, while the integration of visual

and textual elements creates a cohesive, multimodal narrative. This approach aligns with the principles of “new writing”, leveraging digital technologies to combine semiotic resources in innovative ways.

4.3 Visual-textual integration

The tag “Keep crushing it/keep crushing food waste” in Figure 5 is another example of how novel metaphors can help audiences understand the issue of food waste in a new way. The campaign was aimed at citizens to encourage good food behaviour and used the following metaphors and similes: “freezy does it”, “defrost like a boss”, “conquer the cupboard”, “boss it”, “let’s keep crushing it”, “chill the fridge out”, “money saving magic”, “don’t be bananas”, “don’t be a lemon”, and “get your skates on”. Images and pictures often accompany the campaign messages, making the advertising statements more concise and vivid. In figure 5, the picture, the colours and the words can be indices or touch points, but what relates the message to the audience is the multiplicity of the meaning, which acts as a hook.



Figure 5. Poster from Love Food Hate Waste campaign.

An analysis of the "Guardians of Grub" campaign, aimed at businesses in the hospitality and food service industry, reveals a sophisticated interplay between visual and verbal semiotic modes that generates complex interpretative frameworks. The campaign's primary metaphorical construction, "Guardians of Grub", exhibits integration of heroic visual metaphors with strategic linguistic elements, in line with Van Leeuwen's (2008) concept of “new writing”. The "Guardians of Grub" campaign illustrates this through its integration of heroic visual metaphors, linguistic play on “guardians” and “grub”, and superhero-evocative typography. This multimodal configuration creates an active environment for interpretive engagement. The metaphor evokes the idea that food is a valuable resource that needs to be protected and cared for, much like a guardian would protect their custody. Furthermore, the use of the word ‘Grub’ in the metaphor has a colloquial tone, which helps to make the campaign more accessible and engage with a diverse audience. It also reinforces the idea that food is something to be valued and appreciated, rather than taken for granted, an idea which is found

in other metaphors used in the campaign, including “Feed the bottom line, not the bin”, “raise up against food waste” and “Use every drop of your smarts and every ounce of your skills to make sure food stays food”.

Although Figure 6 is a simple metaphor that does not need deciphering, it plays on the saying ‘easy does it’ and the idea to take things slowly, which can become engaging if processed somewhat extensively. Engagement is also given by anthropomorphising the freezer as Freezy which creates a friendly message. For interpreters who watched the Youtube video *Batman did it*, the metaphor can take a clever twist in even a more entertaining, sticky way. However, the lack of the image of a freezer leads interpreters to make inferences based on related information, which supports Sutherland’s explanation of non-sense, discussed above. Even when between the image and the language there might not seem to be a direct relationship, Tuan (2010: 75) suggests that metaphors still create experiences and imagination from “processing various interpretations”. The interpretation process of this example relies on meaning that is beyond what is directly stated. Thus, while the metaphorical visuals or words may not have an obvious connection to the main message, they can still evoke experiences, emotions, and imaginations that resonate with the audience (Tuan, 2010).



Figure 6. Poster from Love Food Hate Waste campaign.

In the poster in Figure 7, below, “bad to the bone” accompanies the picture of a chef. The ambiguity prompts the need for an abductive interpretation, but abduction introduces new ambiguity that requires further reasoning to be resolved. The interpretation of ‘bad to the bone’ along with the image requires a wondering process, while selecting from multiple possible abductive hypotheses. The metaphor prompts the interpreter to creatively reconstruct the connection between bones and being bad, indicating that someone is thoroughly or inherently bad. The details in the poster and the connotations of the metaphor are encouragements for being ‘bad’ in the sense of using everything and it evokes the imagery of badness extending to the core of a person’s being. Using the physical imagery of bones cleverly obscures the more abstract idea of inherent character traits and creates a cognitive displacement between bones and abstract ‘essence’.

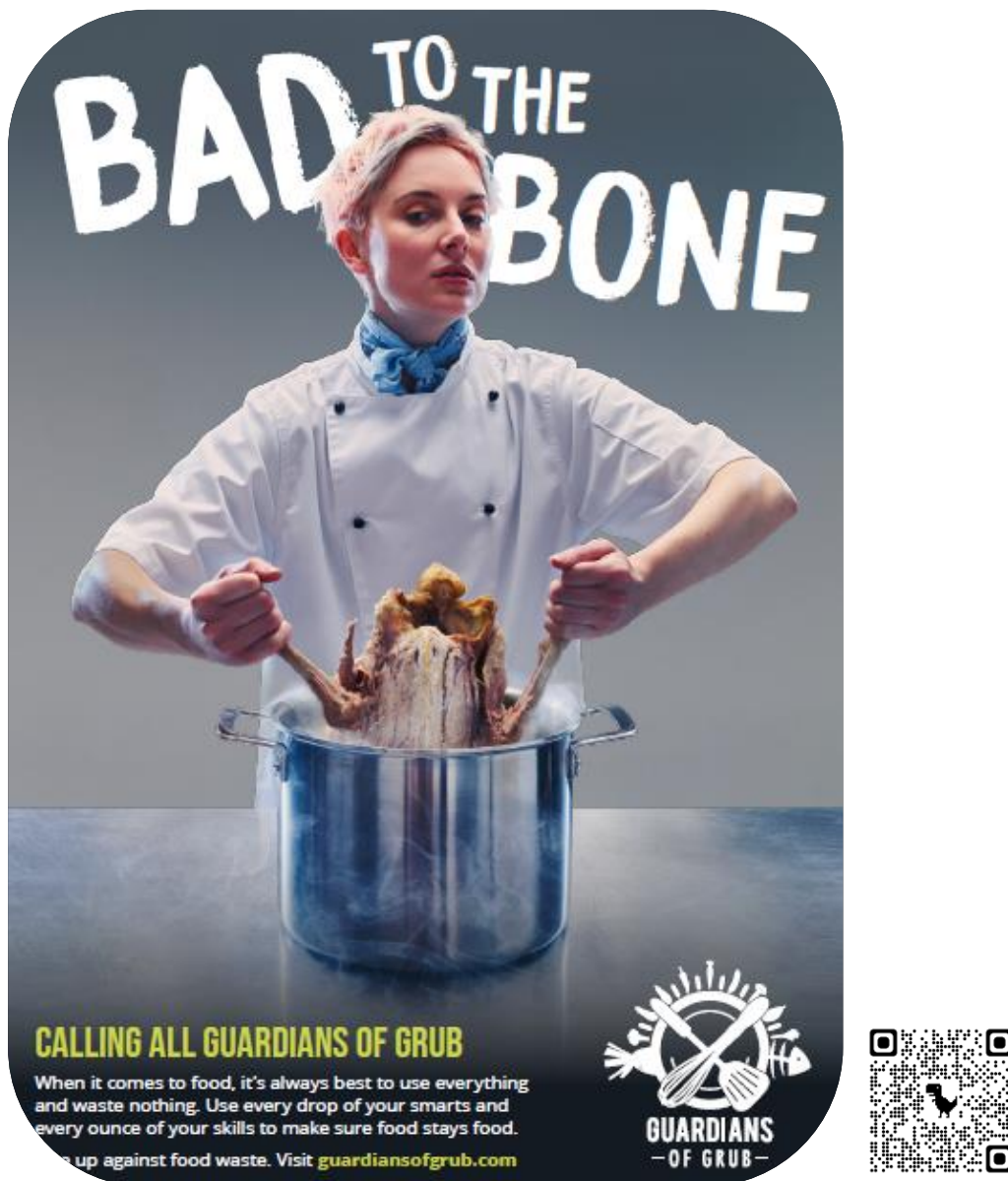


Figure 7. Poster from the Guardians of Grub campaign.

Clarke (1974) notes that background knowledge and context play a role in evaluating explanatory hypotheses. Hence, our prior knowledge of human attributes and food safety informs the abductive process. “Bad to the bone” might bring memories of a song or a TV show to those who know about them. The connotations, together with the multiplicity of meaning and obscurity of the metaphor discussed, support Phillips and McQuarrie’s (2009) findings that only highly figurative metaphors can alter consumer beliefs when they are exposed to ads. Additionally, a person’s behaviour is determined by what they think they are seeing rather than what we think they see (Sutherland, 2019: 184). When deciphering signs, interpreters take on the role of meaning-makers, engaging in a conscious activity that pushes them to look past the ambiguous nature of signs to uncover the meaning behind them. In ads that involve absence, the connection in the shared, underlying assumption leads to a meaningful reality represented through what is ‘already’ there (Williamson, 1978).

Similarly, “Use every drop of your smarts and every ounce of your skills to make sure food stays food” encourages fully utilising one’s intelligence and abilities for avoiding food waste. It evokes a feeling of wringing out every bit of mental capacity. The beauty of metaphor is in its interpretation and vagueness and creative metaphors have no one single right answer. Unlike explicit claims about product attributes, these symbolic metaphors invite the audience to actively parse out meanings and make subjective connections to their own lives. In this way, thought-provoking ambiguity in advertising metaphors requires mental effort from the viewer and results in greater engagement than straightforward declarative messaging. By requiring active decoding of symbolic meaning, skilfully ambiguous ads spark imagination, identification, and investment from the audience.

In this section I analysed various semiotic resources with the aim of supporting the assumption that the ambiguity in new metaphors in campaigns aiming to decrease food waste reflects the power of abductive reasoning. The analysis revealed that the new metaphors convey the idea that wasted food is a complex and multifaceted problem that requires urgent action. Rather than literal messages or conventional metaphors, these campaigns leverage imaginative language, known to resonate emotionally while allowing people to derive their own meanings. For instance, describing leftover food as “rescued” or “saved” implies food has value without spelling it out. It can be theorised that by connecting food waste to vague ideas of rescue and salvation, the messages spark cognitive abductive leaps, linking wasted food to broader feelings of care and responsibility, unlike deductive slogans which state direct conclusions.

Based on the research findings and theoretical frameworks used, it may be surmised that novel metaphorical constructions in sustainability campaigns have the potential to transform audience engagement from passive reception to active participation through creative meaning-

making processes. While the current analysis provides several assumptions for the effectiveness of strategic metaphorical ambiguity in promoting audience engagement, further empirical research is needed to conclusively establish the extent and durability of these effects across different contexts and demographics. The relationship between metaphorical interpretation and behavioral change requires further investigation through longitudinal studies and quantitative impact assessments. This generated insights can significantly enhance the design and implementation of sustainability-related communications.

5. Conclusion

In this paper, I conducted a sociosemiotic analysis exploring how metaphorical ambiguity is manifested in sustainability advertising discourse through various semiotic resources. Building on the established strategic importance of metaphor in advertising, I propose that novel metaphors in advertising campaigns for behavioural change may be associated with increased audience engagement, although further empirical research is required to demonstrate these relationships conclusively. The examples analysed illustrated how creative metaphors were employed both as calls to action and as tools to reshape thinking, suggesting potential ways in which these rhetorical devices may guide audience understanding. This study specifically explored how metaphorical constructions operate within sustainability communications, mapping their semiotic patterns and interpretative possibilities. The findings revealed that ambiguous metaphorical constructions could prompt more extensive processing of sustainability messages, as audiences navigate multiple interpretative possibilities in search of resolution. This deliberate complexity, when successfully resolved, appears to enhance message effectiveness and audience receptivity to sustainability initiatives. This study supports the suggestion that novel metaphorical constructions are particularly effective in behavioral change campaigns, because they facilitate cognitive restructuring through abductive reasoning processes. The findings highlighted the potential relationships between metaphorical complexity and audience processing. The conclusion about consumer engagement in relation to varying metaphorical configurations is tentative, pending corroborative empirical research. The scope of the paper was limited to campaigns from the UK over a short period of time, but further research can examine metaphorical obscurity across larger corpora and diverse cultural contexts. This study contributes to both academic research and practical applications by showcasing metaphor's role in behavioral change communication. Future research will benefit from experimental studies that examine how varying degrees of metaphorical ambiguity influence message processing and interpretation in sustainability advertising.

References

- Advertising Association (2020). *UK advertising launches Ad Net Zero*. Available at <https://adassoc.org.uk/our-work/uk-advertising-launches-ad-net-zero/> [accessed 20/06/23].
- Arrighi, C. and Ferrario, R. (2008). Abductive Reasoning, Interpretation and Collaborative Processes. *Found Sci* 13, 75–87.
- Attardo, S. (2015). Humorous Metaphors. *Cognitive linguistics and humor research*, 26, 91.
- Bateman, J. A. (2016). Addressing methodological challenges in brand communications research: A comparison of structuralist, Peircean and social semiotic readings of advertising. In Rossolatos, G. (eds.), *Handbook of Brand Semiotics*, 237–274. Kassel: Kassel University Press.
- Bell, P. (2004). Content analysis of visual images. In *The Handbook of Visual Analysis* (pp. 10-34). SAGE Publications Ltd
- Black, M. (1955). "Metaphor." *Proceedings of the Aristotelian Society* 55: 273-294.
- Black, M. (1962) *Models and metaphor*. Ithaca, NY: Cornell University Press.
- Byron, G.G. (2020) *Don Juan*, Penguin Classics, London: Penguin Random House.
- Clarke, B.L. (1974). The argument from design—A piece of abductive reasoning. *International Journal of Philosophy Religion* 5, 65–78.
- Coble, P. (2010). Second-order thinking, first-class reasoning. *Signs*. 3: 69–107.
- Coble, P. (2018). Human understanding: The key triad. *The American Journal of Semiotics* 34(1/2): 17–38.
- Dehay, E.K. and Landwehr, J.R. (2019). A MAP for effective advertising: the metaphoric advertising processing model. *AMS Rev* 9, 289–303.
- DeRosia, E. D. (2008). The Effectiveness of Nonverbal Symbolic Signs and Metaphors in Advertisements: An Experimental Inquiry, *Psychology and Marketing*, 25 (3), 298-316.
- Derrida, J. (1974) White mythology: Metaphor in the text of philosophy. Translated by Moor, F.C.T. *New Literary History*, 6(1), pp.5-74.
- Eco, U. (1984). *Semiotics and the philosophy of language*. Bloomington: Indiana University Press.
- Empson, W. (1930). *Seven Types of Ambiguity*. London: Chatto and Windus.
- Escalas, J.E. (2004). Narrative processing: Building consumer connections to brands. *Journal of Consumer Psychology* 14(1–2): 168–180.

- Evans, J. St. B. T. (2007). Hypothetical thinking: Dual processes in reasoning and judgment. *Psychology Press*.
- Fauconnier, G. and Turner, M. (2002) The way we think: Conceptual blending and the mind's hidden complexities. Basic Books.
- Fauconnier, G. and Turner, M. (2008) Rethinking metaphor. In: Gibbs, R. (ed.) Cambridge Handbook of Metaphor and Thought. Cambridge University Press: New York.
- Gentner, D., Bowdle, B., Wolff, P. and Boronat, C. (2001). Metaphor is like analogy. *The analogical mind*. The MIT press.
- Gibbs, R. W. (2005). Embodiment in metaphorical imagination. *Grounding cognition: The role of perception and action in memory, language, and thinking*, 65-92.
- Gkiouzepas, L. and Hogg, M. K. (2011). Articulating a new framework for visual metaphors in advertising. *Journal of Advertising*, 40, 103–120.
- González, M. E. Q. and Haselager, P. (2005). Creativity: surprise and abductive reasoning. *Semiotica*, 2005(153 - 1/4).
- Irwansyah (2024). The lexicon of Bekasi district's semiofoodscape: between tradition and innovation. *International Journal of Marketing Semiotics & Discourse Studies*. Vol. XII, pp.1-24.
- Jenkins, E., Brennan, L., Molenaar, A. and McCaffrey, T. (2022). Exploring the application of social media in food waste campaigns and interventions: A systematic scoping review of the academic and grey literature. *Journal of Cleaner Production*, 360, Article 13206.
- Jeong, S. H. (2008). Visual metaphor in advertising: Is the persuasive effect attributable to visual argumentation or metaphorical rhetoric? *Journal of marketing communications*, 14(1), 59-73.
- Johar, G. V., Maheswaran, D. and Peracchio, L. (2006). MAPping the Frontiers: Theoretical Advances in Consumer Research on Memory, Affect, and Persuasion. *Journal of Consumer Research* 33 (June): 139–149.
- Johnson, M. (2018). The Aesthetics of Meaning and Thought: The Bodily Roots Of Philosophy, Science, Morality And Art. Chicago: University of Chicago press.
- Johnson, M. and Lakoff, G. (1980). *Metaphors we live by*. University of Chicago press.
- Kadry, A. (2016). The persuasive effect of using visual metaphors in advertising design. *International Journal of Design*, 6(1), 33-40.

- Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist* 58(9):697–720.
- Lagerwerf, L., Van Hooijdonk, C. M. and Korenberg, A. (2012). Processing visual rhetoric in advertisements: Interpretations determined by verbal anchoring and visual structure. *Journal of Pragmatics*, 44, 1836–1852.
- Lakoff, G. and Johnson, M. (1999). *Philosophy in the flesh - the embodied mind and its challenge to Western Thought*. NY: *Basic Books*.
- Larson, B. (2011). *Metaphors for Environmental Sustainability: Redefining Our Relationship with Nature*. Yale University Press.
- Ledin, P. and Machin, D. (2018). *Doing visual analysis*. London: SAGE Publications.
- Levitt, T. (1981). Marketing intangible products and product intangibles. *Cornell Hotel and Restaurant Administration Quarterly*, 22(2), 37-44.
- Littlemore, J., and Perez-Sobrino, P. (2017). Eyelashes, speedometers or breasts? An experimental cross-cultural approach to multimodal metaphor and metonymy in advertising. *Text*, 30(1), 197–222.
- Love Food Hate Waste (2023). #FoodWasteActionWeek. Retrieved from <https://lovefoodhatewaste.com/food-waste-action-week/>
- Love Food Hate Waste (2023). Campaign Retrieved from https://www.lovefoodhatewaste.com/take-action-save-food/food-waste-action-week?_ga=2.106660998.404353023.1689676601-1990784305.1689676601
- Lundmark, C. (2005). *Metaphor and creativity in British magazine advertising* (Doctoral dissertation, Luleå tekniska universitet).
- Machin, D. and Cobley, P. (2020). Ethical food packaging and designed encounters with distant and exotic others. *Semiotica* 2020 (232):251-271.
- Martin, R. L. (2022). *A New Way to Think: Your Guide to Superior Management Effectiveness*. Harvard Business Review.
- McGuire, W. (2000). Standing on the Shoulders of Ancients: Consumer Research, Persuasion, and Figurative Language, *Journal of Consumer Research*, Volume 27, Issue 1, 109–114.
- McQuarrie, E. F. and Mick, D. G. (1996). Figures of rhetoric in advertising language. *Journal of consumer research*, 22(4), 424-438.
- McQuarrie, E. F. and Mick, D. G. (2003) Visual and Verbal Rhetorical Figures under Directed Processing versus Incidental Exposure to Advertising, *Journal of Consumer Research*, Volume 29, Issue 4, 579–587.

- McQuarrie, E. F. and Phillips, B. J. (2005). Indirect persuasion in advertising: How consumers process metaphors presented in pictures and words. *Journal of advertising*, 34(2), 7-20.
- Mercier, H. Sperber, D. (2011). Why do humans reason? Arguments for an argumentative theory. *Behav Brain Sci.* Apr ;34(2):57-74.
- Müller, R. (2008). Incongruity and Ambiguity of Humor in Advertising: The Case of Parody Advertisements. *Australasian Marketing Journal*, 16(1), 54-68.
- Parde, N. and Nielsen, R. (2018). Exploring the Terrain of Metaphor Novelty: A Regression-Based Approach for Automatically Scoring Metaphors. *The Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)*.
- Peirce, C. S. (1960). *Collected Papers of Charles Sanders Peirce*. Belknap Press. Noted CP.
- Peréz Sobrino, P., Littlemore, J. and Ford, S. (2021). *Unpacking creativity. The power of figurative communication in advertising*. Cambridge University Press.
- Phillips, B. J. (1997). Thinking into it: Consumer interpretation of complex advertising images. *Journal of advertising*, 26(2), 77-87.
- Phillips, B.J., and McQuarrie, E.F. (2009). Impact of Advertising Metaphor on Consumer Belief: Delineating the Contribution of Comparison Versus Deviation Factors. *Journal of Advertising*, 38, 49 - 62.
- Pistol, R. (2022). *Aesthetic experience, novelty and consciousness in the comprehension of metaphors*. PhD thesis, Middlesex University. Unpublished Thesis.
- Ricoeur, P. (1977). *The Rule of Metaphor: Multi-Disciplinary Studies of the Creation of Meaning in Language*. Translated by Robert Czerny. Toronto: University of Toronto Press.
- Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68-78.
- Sutherland, R. (2019). *Alchemy: the surprising power of ideas that don't make sense*. WH Allen.
- Sutherland, R. (2019). *The Wiki Man*. It's Nice That and Ogilvy Group Ltd.
- The Global Food Banking Network, (2023). *Food loss and waste is a top contributor to climate change*. Available at: <https://www.foodbanking.org/reducing-food-loss-and-waste/> [accessed 20/06/23].
- Toncar, M. and Munch, J. (2001). Consumer responses to tropes in print advertising. *Journal of advertising*, 30(1), 55-65.

- Tuan, L. (2010). Metaphors in advertising discourse. *Studies in Literature and Language*, 1(6), 75.
- UN's Food and Agriculture Organisation (2023), FAO. 2023. *Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap, Part 1 – How agrifood systems transformation through accelerated climate actions will help achieving food security and nutrition, today and tomorrow, In brief*. Rome. Available at: <https://openknowledge.fao.org/items/b86cd543-e8ca-4e95-b5d2-06ea6af23842> [accessed 20/07/24].
- van Leeuwen, T. (2008) New forms of writing, new visual competencies. *Visual Studies* 23(2).130–135.
- van Leeuwen, T. and Kress, G. (2006). *Reading images: the grammar of visual design*. London & New York: Routledge.
- Van Mulken, M., Van Hooft, A. and Nederstigt, U. (2014). Finding the tipping point: Visual metaphor and conceptual complexity in advertising. *Journal of Advertising*, 43, 333–343.
- Wiles, J. (2011). Reasoning, robots, and navigation: Dual roles for deductive and abductive reasoning. *Behavioral and Brain Sciences*, 34(2), 92-92.
- Williamson, J. (1978). *Decoding Advertisements*. London: Marion Boyars.
- WRAP (2023). Helping more people to waste less food. Retrieved from <https://wrap.org.uk/taking-action/citizen-behaviour-change/love-food-hate-waste>
- Wrap UK. (2022). Food Waste Action Week. Retrieved from <https://wrap.org.uk/food-waste-action-week>
- Wu, K. (2001). *On Metaphoring: A Cultural Hermeneutic*. By Leiden: Brill Academic Publishers.
- Yorkston, E. and Menon, G. (2004). A Sound Idea: Phonetic Effects of Brand Names on Consumer Judgments. *Journal of Consumer Research* 31 (June): 43–5.
- Zaltman, G. (2008). *Marketing Metaphoria: What Deep Metaphors Reveal about the Minds of Consumers*. Harvard Business Press.
- Zaltman, G. and Coulter, R. H. (1995). Seeing the voice of the customer: Metaphor-based advertising research. *Journal of advertising research*, 35(4), 35-51.

Appendix 1- Links to the figures used in this study

Figure 1: Poster 2021 WRAP Love Food Hate Waste; Wasting food feeds climate change.

Available at: <http://www.lesswaste.org.uk/2021/03/01/food-waste-action-week-1st-to-7th-march-2021/>

Figure 2: Banner WRAP Love Food Hate Waste; Our planet, our food.

Available at: https://www.lovefoodhatewaste.com/sites/default/files/styles/media_component_16_9_lg/public/2022-08/food-planet-sh448837363.jpg?h=088cd3d7&itok=O_k2N645

Figure 3: Picture from Google company news at blog.google published by Michiel Bakker on 07th March 2022.

Available at: <https://blog.google/outreach-initiatives/sustainability/two-new-pledges-reduce-food-loss-and-waste-google/>

Figure 4: Facebook post for UFO

Available at: https://www.facebook.com/GtrCamRecycles/posts/4096083740401639/?locale=sw_KE&p_aipv=0&eav=AfaMkr5_w8kz7dA1TFkTz4C8k-tgxpUNRbXZohLjX4RFNZnHhW9e9u4se8aodLgebqM

Figure 5: Poster from Love Food Hate Waste campaign.

Available at: <https://wrap.org.uk/resources/campaign-assets/keep-crushing-it-campaign-playbook>

Figure 6: Poster from Love Food Hate Waste campaign. Available at:

<https://wrap.org.uk/resources/campaign-assets/keep-crushing-it-poster-1-freezy-does-it>

Figure 7: Poster from Guardians of Grub campaign.

Available at: <https://guardiansofgrub.com/resources/downloads/posters/>