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SOCIAL MEDIA MARKETING: LINGUISTICS & TECHNOLOGY

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ABSTRACT

This dissertation, structured as three essays, explores various aspects of modern linguistics and technology with regards to social media marketing through various methods and original datasets. The first essay introduces the linguistic framework of animacy into marketing to explore how brands are perceived as “living” entities by consumers. A novel method for measuring animacy through computational linguistics is developed and demonstrated on a dataset of branded social media posts. The second essay explores the concept of brand activism through the framework of ego involvement, and how consumers engage with brands on social media. This is explored using both social media data and a survey instrument. The third essay returns to the concept of animacy, this time looking at how consumers react to AI generated content on social media. Like the second essay, this is explored through both social media data and a survey. This research aims to advance the understanding of the role linguistics play in several critically relevant areas of marketing science.

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“Living” Brand Communications: Aesthetic, Semiotic, and Animate Functions of Branding

Introduction

The most important function of a brand is communication. Firms carefully craft and position brands to quickly communicate why their products provide the best value, will help elevate a customer’s social status, or offer an unmatched level of quality. Much work has already been done to develop individual aspects of brand communications, and the aim of this paper is not to provide a unified theory of branding to either encompass or replace previous theories. The primary aim of this paper is to develop a new theoretical construct of brand animacy as a key driver in the relationships that consumers form with brands and provide empirical evidence for its impact. To make this argument, I first develop understandings of brands as aesthetic objects with a semiotic function using existing literature in sections I and II. After these elements are established, I briefly explain what animacy is and why borrowing it from other fields broadly offers value to the marketing literature in section III. In section IV I develop the concept of brand animacy, how it relates to existing constructs of brand “aliveness”, and what advancements it offers to marketing science in explaining how brands form connections with individuals. Section V proposes an empirical methodology for measuring brand animacy in a social media environment, and section VI presents early exploratory findings.

I. Brands as Aesthetic Objects

In order to understand the communicative role that brands play, it is helpful to describe brands as aesthetic objects. Most brands have aesthetic *elements*—the logos, the colors, the figures, etc.—but what I want to emphasize by this claim relates to the entirety of the brand as a singular entity that represents the firm while being separable from the corporate organization itself. As an example, Gatorade, Lays, and Quaker Oats are all brands that have cohesive

meanings, each marking products as likely to follow some set of expectations that ultimately result from their production and corporate source, but do not instantly invoke PepsiCo, owner of all three brands, in the minds of most consumers. The significance of this cohesive intermediary role in communication will be explored in the next section, but first it is important to trace the aesthetic nature of brands as objects. Definitions of aesthetic objects typically focus on works of art and are primarily concerned with questions related to the fields of art criticism. From this perspective, crafting precise definitions of ‘art’ as aesthetic objects becomes a contentious and difficult endeavor. According to Morris Weitz (1989) (drawing upon linguistic concepts from Wittgenstein), articulating a “closed” definition of art that would provide necessary and sufficient conditions that could be checked off to determine whether or not something is a work of art (or even belonging to a precise category within art such as “painting” or “poem”) is functionally impossible. The nature of art and artistic pursuit resist simple classification, as modes of expression evolve or are intentionally challenged by artists. Attempts to overcome this difficulty frequently turn to the “institutional theory of art”, that appeals to the role of critics and other institutions as arbiters of how to classify aesthetic objects as art (Hagberg, 2002), although even this model is critiqued for vesting power to determine what is or isn’t art into too central and established of a community.

Fortunately, attempting to view brands as aesthetic objects avoids many of the philosophical difficulties inherent to art. Since the philosophical study of aesthetics does center so heavily around art, it is still beneficial to fit potential definitions of brands as aesthetic objects to the conversations around art to draw most richly on existing literature. From the perspective of the institutional theory, the arbiters of what can be classified aesthetically as a brand are consumers, as their ability to associate it with certain expectations or loyalties to their

represented firms signals the success or failure of the brand to function as a representative. Earlier “closed” theories of art can also be used for brands. Different forms of art have different defining features that make them belong to a particular aesthetic type, such as paintings, statues, musical compositions, poetry, and so on (Beardsley, 1961) (Berleant, 1964). While the purpose for their creation differs from most traditional aesthetic or artistic forms (Beardsley, 1965), brands too share a set of externally recognizable features that allow viewers to distinguish them from other forms of expression: most notably logos, colors, and associations with products or services.

I would next like to appeal to the aesthetic philosophy of John Dewey as a third useful way to understand brands as aesthetic objects, and the one which will be the focus in this paper. While an aesthetic understanding of branding can be derived from many different philosophies of art, I believe that Dewey’s provides one of the simplest for this purpose. Dewey (1934) argues that the aesthetic must begin with the everyday experience, and that art only has aesthetic standing as it is experienced in a communicatory role by humans (Alexander, 1987). While critics argue that Dewey’s theory is ineffective for defining or explaining formal art, it is these very “flaws” that make it so effective for defining brands as aesthetic objects. Dewey’s view of aesthetics makes two assertions about art that are particularly problematic in formal contexts (Boas, 1953): (1) *Art is always communicative*; (2) *Art is always experiential*. As Boas points out, it is not hard to generate examples of art that find aesthetic value in concealment rather than communication, or art that is noteworthy despite not offering any route towards a unifying experience. In contrast, a brand’s most important purpose is communication. A brand that fails to communicate anything about the value or quality of a product to consumers is worthless to a firm.

Similarly, if as I previously proposed one of the formal elements that defines a brand as an object is an association with a product or service, then brands are inherently linked to experience through consumers' use and consumption of the product or service¹. The notion of aesthetic experience captures how viewers respond to a particular work of art, and similarly, we can describe consumers engaging with brands as a type of aesthetic experience. Fenner's (2003) exploration finds aesthetic experience to be shaped by formal analysis, associations, context, and external factors associated with the art. While formal analysis plays a much smaller role in consumers' engagements with brands than it might with other aesthetic objects, the latter three elements are core to both the purpose and reality of branding as explored previously. The managerial implications of this were introduced theoretically in Mazzalovo's *Brand Aesthetics* (2012), which extensively explores how consumer sensory experiences are central to their experience of brands, and traced through various real-world scenarios in del Blanco's *Brand Beauty Unleashed* (2020). In addition to being experienced via the senses, the aesthetic experience—of brands or other aesthetic objects—is something created by both the artist who produced the work, and the viewer who is perceiving it (Perricone, 1990) (Smith, 2002). This co-creation of meaning will become important to the semiotic role of brands in communication we will discuss in the following section, as both the intended messages infused into the brand by the firm and customer contexts and experience merge to shape how consumers ultimately will perceive and process the brand internally.

¹ Dewey's philosophy of art frequently refers to aesthetic experience as a "consummatory experience" (Mathur, 1966). It is important to note that the root word is *consummation* (most commonly applied to sex or eating), not *consumption*. While it may be possible to argue that consumer behavior in the market is driven by consummatory behavior (Kopetz, et al., 2012), and that brands can drive this behavior (Mason, 2013), I am neither advancing or refuting those arguments here.

To better understand the structure of brands as aesthetic objects, I would like to propose that brands have at least three distinct aesthetic layers. First, there are the aesthetics of the product itself. This aesthetic layer will be referred to as the *design* layer, since most of the discussion about it can be found in the product design literature. This layer captures both the functional and the decorative elements of the product as an artifact (Forsey, 2013). A partial listing of the aesthetic elements in the design layer of a pair of headphones includes the physical materials it is made from, the elegance or excitement of the form, a comfortable and secure feel for the user's ears, and the clarity of sound that the audio drivers can emit. The second aesthetic layer will be referred to as the *communications* layer, which captures all the marketing communications and promotional activities that the firm engages in that customers see. For the example product of headphones, the aesthetics of the communications layer include the television and internet ads that a user sees, the ambiance of the store where the headphones can be purchased, the packaging of the product, any mascots or spokespeople, and any PR or social media posts by the firm. The third aesthetic layer will be referred to as the *consumption* layer, and encompasses the user's experience of using the product, including the purchase experience (Moss, 2007). Returning to the headphones example, this layer could include the interactions with employees at the store they are purchased from, the unboxing process and pairing them with a computer or phone, and how the audio the user chooses to play meshes with the technology in the product.

II. Brands as Semiotic Objects

The next piece that must be developed to understand the communicatory role of brands is their semiotic function. Oxford Languages defines semiotics as “the study of signs and symbols and their use or interpretation”. The application of the field of semiotics to marketing can be traced at least to Roland Barthes, who briefly explored the effects of advertising on post-WWII

life in his seminal work *Mythologies* (1957 / 1991). Most work related to semiotics in marketing understandably focuses on the visual aspects present in specific advertisements (Solomon, 1988) (Domzal & Kernan, 1992) (Bianchi, 2011), but as the sophistication and integration of marketing becomes more complex, more thorough analyses of what exactly customers perceive when they view marketing messages are needed. To this end, in 1986 the first International Conference on Marketing and Semiotics was held, inviting researchers from both fields to discuss the structural relationships between the fields (Zakia & Nadin, 1987). Development of semiotic theories of marketing communication channels developed rapidly, most importantly discovering that consumer interpretations of marketing materials are more important than the literal messages (Scott, 1994).

Despite these advances, creating a cohesive semiotic understanding of brands has remained elusive, a major frustration since the unit of the brand appears to be the most logical focus. Brands are meant as tools for communication and identification, as previously mentioned using logos, colors, images, text, sounds, and characters to quickly clue customers into who made the product and encourage them to easily associate products bearing specific brands with past experiences or knowledge of the brand (Berger, 2010). Many of the difficulties in understanding the semiotic role of brands can be attributed to the required level of nuance. Manning (2010) finds that many initial attempts to create a semiotic understanding of brands either divorces the incorporeal nature of brands entirely from their physical products and services, or abstract the definition of brand to a degree where it is hard to find something that *isn't* a brand.

Laura Oswald's *Marketing Semiotics* (2012) is foundational to articulating the semiotic application of brands, and further linking this role to the value created by brands. Brand value is

largely determined via customer response to the brand. Oswald takes this a step further, arguing that value creation occurs as brands “resonate with the structure of myths, archetypes, and rhetorical operations at work in the cultural environment” (2012, p. 8). Conejo and Wooliscraft (2014) develop a model of brands as semiotic marketing systems, emphasizing the role of brands as communication intermediaries. Though the benefit of a full systems approach to branding has been questioned (Gaski, 2014), Conejo and Wooliscraft’s articulation of brands as semiotic objects—coherent entities that reflect and project meanings in all directions of interaction—is invaluable to this project. Figure 1 presents a conceptual model of brands as semiotic objects that will be used in this paper, with an explanation to follow.

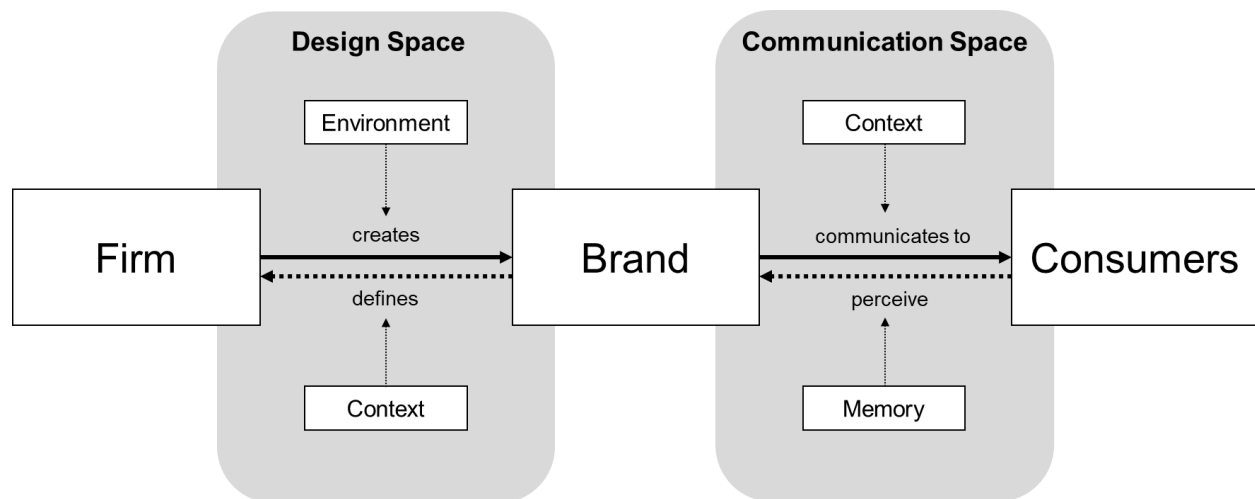


Figure 1: conceptual model of brands as semiotic objects

To better understand the above model, consider the following analogy of two individuals communicating by mail. The sender (representing the firm) writes a letter to the receiver (representing the consumer), who is a close friend. The letter wishes the receiver a happy birthday accompanied with a thoughtful note that is handwritten on a nice card. It is several weeks after the receiver’s birthday, and the sender has always sent birthday cards to the receiver

at the correct time in the past. The receiver knows that the sender has just been released from the hospital after a lengthy stay. In this example, traditional models of brands as concrete objects would focus on the letter itself: what does it say, how nice does it look, did the sender seem to put in much effort, etc. In contrast, the view of brands as semiotic objects would consider not just the letter itself, but everything around it. What is the past relationship between sender and receiver? Is the letter timely? Does the receiver know why it may have been late? The second view creates a much more comprehensive image of what message the receiver takes away from the letter, and ultimately how it affects their view of the sender.

There are two main phases in which semiotic brand objects can be seen to operate. The first—which I’ve labeled in Figure 1 as the design space—is the phase where the firm creates and deploys the concrete brand: the logos, the colors, the messages, etc. In the letter analogy, this phase is where the sender writes the card to the receiver. Although the primary concerns in this phase are designing the brand and reflecting on how the brand (as constructed) reflects and defines the firm, the macroenvironment of competitors, social trends, and previous brand activities shapes the development and implementation of the brand. The first phase ends when the brand enters the market, or the sender deposits the letter with a postal service.

In the second phase, or the communication space, consumers see and respond to the brand that has been put into the market by the firm. In the letter analogy, this phase begins when the receiver retrieves the letter from their mailbox. In addition to responding to the message communicated by the brand directly, consumers are also affected by the context in which they encounter the brand, such as the retail environments carrying the brand, or the TV shows they were watching when a commercial brought the brand to their attention. Past interactions with or knowledge of the brand will further shape how they respond. It is worth noting that in this

model, the time between the brand being designed and being perceived is not considered. This is because any effects or shifts in market positioning may occur earlier, they don't affect consumer behavior until the consumer encounters the brand. In the letter analogy, the postal service could misplace the letter or deliver it late, but the effect of that delay would only be concretely quantifiable after the letter is delivered to the receiver.

The model I propose in figure 1 shares many similarities with the three-stage model of semiosis of Charles Sanders Pierce. Pierce's model, with stages termed *Object*, *Representamen*, and *Interpretant* (Short, 2007), was previously adapted to brands by Biedziński (2018). Biedziński's semiotic theory of brands is that the material components (the product or service) serve as the Object, branding (advertising, logos, etc.) serves as the Representamen, and consumer interpretations serve as the Interpretant. This model tracks the accepted view of advertising as a semiotic process. Consider the simple, less controversial analysis of advertising as semiosis: Whatever is being sold is the Object, the advertisement is the Representamen, and the customer decodes the marketing message as the Interpretant. The customer's process of decoding the advertisement is heavily affected by other ads that he has seen for competing products and cultural perceptions of adjacent imagery (Danesi, 2008), such as an ad for an electric car evoking a clean and natural environment or implying a moral imperative towards ecological consciousness (Hardy, 1998). This is consistent in branding, as brands are mentally constructed through countless similar associations (Thellefsen & Sørensen, 2015). For brands, these associations may be direct or tangential (Gray, 1992). Brands reference cultural elements in addition to those directly associated with their market, such as movies, mythical narratives, and contemporary events (Beasley & Danesi, 2002). This can be demonstrated in marketing contexts as consumer perceptions of brands are also shaped by the purchase experience and much more.

There is no single cultural model that limits what may be employed, allowing ads to draw from virtually any source, even those that previously would be considered remarkably niche or taboo (Eco, 2019).

There are two primary differences between my model and Biedziński's. First, I choose to place the firm rather than the product as the Object. There are two reasons for this. First, Biedziński is focused on brand creation, or the formation of a new brand identity. From this perspective, starting from individual products is highly logical. In contrast, my model attempts to account for the semiotic role of established brands that are already at work in the market. Secondly, I have departed from Pierce's framework to introduce two 'spaces' where the aesthetic can be shown to actively contribute to the semiotic function of the brands. Dewey's theory of art defines both creation (design space) and consumption (communication space) of artistic forms as aesthetic experiences that serve as efficient conduits for the creation of meaning (Dewey, 1926). The aesthetic-semantic function of the brand is best built from the product or firm outward. As defined as early as John Dewey, "every well-constructed object and machine has form, but there is esthetic form only when the object having this external form fits into a larger experience" (Dewey, 1934, p. 341). Effectively, Dewey's critique of cold, functional modernism (Gendlin, 1997) (Henning, 2022) foreshadowed a crisis in marketing (Kerin, 1996). Strictly utilitarian products might increase the efficiency of consumers' lives, but they provide no anchor to meaning on their own. The rise of modern marketing—perhaps most notably via post-World War II advertising—evolved to address these concerns, through aesthetically pleasing product design, a push for products or services that aided in self-realization and identity formation, and in branding that provided loose narrative frameworks for customers to experience. The fitting of the

aesthetic form into the experience solidifies the semiotic meaning and allows it to more comfortably fit into an individual's mind (Innis, 2002).

III. What is Animacy?

Before discussing how aesthetic and semiotic branding connects to consumer interactions with brands, a brief introduction to the concept of animacy is necessary. In plain terms, animacy is the measure of how 'alive' something seems to be. Most definitions of animacy view it as a hierarchy, extending continuously from intangible concepts to inanimate objects to plants to animals to people with increasingly higher degrees of animacy. As a simple rule, anything that can be labeled as a noun (or pronoun) in English can be located on the animacy hierarchy. Animacy is a perceptual measure, meaning that a perfect robotic replica of a person would possess the same degree of animacy as the original human would to an uninformed observer.

Animacy is ultimately a biological concept, both describing life and in shaping how many organisms experience the world. Many experts attribute the cognitive effects of animacy to the evolutionary needs to recognize predators or prey (Rutherford & Kuhlmeier, 2013) (Lorenzi & Vallortigara, 2021). Animacy impacts memory as demonstrated through cognitive studies (Ratnayake, et al., 2010) (Nairne, et al., 2013), with objects perceived as possessing higher animacy being easier for subjects to remember (Li, et al., 2016) (Nairne, et al., 2017). Using literary analysis on anthropomorphic mascots², Patterson et al. (2013) find that humanlike characters are key to cognitive retention and recall by consumers. Studies using both written and spoken language indicate that animate objects are comprehended quicker than inanimate objects

² Despite both being ways of describing the "aliveness" of things, animacy and anthropomorphism are quite different. Animacy is a continuous scale on which all entities or objects can be placed, while anthropomorphism is limited to attributing human characteristics to non-human beings or objects. Animacy is a measure of how objects are perceived, while anthropomorphism is description of how objects are portrayed. Finally, animacy can refer to either intentional or unintentional aspects of an object, while anthropomorphism is almost always intentional.

(Macdonald, et al., 2020) (Wang, et al., 2020). Visual experiments have similar results. Subjects process animate objects with greater focus than inanimate objects (Sha, et al., 2014), and even motion (Kawabe, 2017) and independence (van Buren, et al., 2017) typically associated with biological actors serve as a trigger for greater focus and processing (van Buren, et al., 2016).

Animacy is an incredibly important and widely studied element of language, also frequently linked to evolutionary reasons (Gobbini, et al., 2011) (Sealey, 2018) (Vihman & Nelson, 2019). The development of the animacy hierarchy is primarily the fruit of linguists, with several variations advanced with different emphases (Cherry, 1992) (Yamamoto, 1999) (Chen, 2012). Although consistent in the overall rankings of perceptual classes (see Appendix 1 for an example of a universal animacy hierarchy), each expression of the hierarchy focuses on particular grammatical features (Sorlin & Gardelle, 2018). Even among the different specific models, animacy exists with few changes across vastly different languages and cultures (Radanović, et al., 2016), unifying formal and informal linguistic expression (Comrie, 1989) with political and social meaning (Kosiba, 2020).

Though not as coherent or structured as linguistic theories of animacy, many aesthetic implications of animacy in art or other visual media have been researched. Again, evolutionary arguments can be made for the effect that animacy in art has on viewers (Chen, et al., 2021) (Chen, et al., 2022). Historically, animacy has been deployed in works of art to focus the viewer's attention through emphasizing the lifelikeness of specific characters (DeMarrais, 2017) or even inanimate objects (Shomura, 2021). Particularly in the case of animacy highlighting non-human subjects or objects, the use of animacy can draw attention to that which might otherwise be ignored (Cohen, 2020). Even when combined with other aesthetic techniques, the effects of animacy on viewers remain constant (Muralikrishnan, et al., 2014).

IV. Brand Animacy

Why is the understanding of brand animacy important? Within both popular and academic accounts of marketing, the concept of consumers having “relationships” with brands has been thoroughly developed. Strategically, generating strong relationships between consumers and brands is highly desirable for firms as an effective means of driving customer loyalty. Many of the factors that can contribute to customer-brand relationships closely mirror those of interpersonal relationships. The idea of purchase behavior being impacted by how consumers perceive a product as impacting their self-concept is mature in both marketing literature and practice (Grubb & Grathwohl, 1967), leading to more specialized understandings such as perceived similarity with other consumers of the same brand (Grubb & Hupp, 1968) and self-brand congruence (Sirgy, 1982). Congruence with both the actual-self and the ideal-self positively impacts product and brand perceptions (Zinkhan & Hong, 1991) (Hong & Zinkhan, 1995) (Graeff, 1996). The development of brand personality (Aaker, 1997) forms the baseline of understanding how branding’s impact on behavior based on self-congruence can be better understood through dimensions that correspond between particular human personality traits and perceived brand personality traits rather than on an aggregate level (Aaker, 1999). In-depth analysis of brand personality finds that the traits ascribed to brands follow coherent patterns, such as “sincere” brands are frequently viewed as having “high morals” or being “family oriented” or “rugged” brands being viewed as “highly masculine” (Maehle, et al., 2011).

It is important to distinguish the proposed concept of brand animacy from existing frameworks. Both brand personality and anthropomorphism are mature concepts within the marketing literature which share many similarities with brand animacy. While these concepts are both related to animacy, they are distinct, each attempting to address a different subset of phenomena. Anthropomorphism is a very specific concept, specifically referring to the giving of

human traits to non-human entities (from animals to inanimate objects). Anthropomorphism is almost always applied to brands or other marketing communications visibly and intentionally (Portal, et al., 2018). Spokescharacters and mascots are perhaps the most common use of anthropomorphism in marketing. Additionally, anthropomorphism is limited as a strategic concept, as the narrow focus of anthropomorphization limits effect contexts (Puzakova & Aggarwal, 2018). In contrast, both brand personality and brand animacy are perceptual concepts (Ghorbani, et al., 2022), which may be perceived by customers regardless of an organization's intentions. The simplest way to contrast brand personality and brand animacy is psychological/mental vs physical. Brand personality is primarily focused on the intangible traits that are associated with or invoked by a brand, originally formulated along dimensions of sincerity, excitement, competence, sophistication, and ruggedness (Aaker, 1997). Animacy is focused on the physical traits or actions taken by a brand which makes it seem alive, such as the word choices used in communications or the swiftness with which a brand seems to respond to customer issues. Frequently, branding decisions or marketing activities will simultaneously shape perceptions of brand personality and animacy, and the two remain closely linked despite their distinct focuses.

Table 1: Comparison between brand constructs

	Brand Anthropomorphism	Brand Personality	Brand Animacy
Definition	Giving human characteristics, behaviors, or physical forms to non-human entities	Set of human characteristics and traits that consumers associate with a brand	How "alive" consumers perceive a brand as being
Scope	Usually focuses on specific mascots, characters, or product representations	Encompasses the entire brand's character and identity	Perceptual, involving the brand's entire character and identity, in addition to consumer experiences and associated
Expression	Creates literal human-like characters or gives human traits to objects	Communicated through messaging, tone of voice, visual identity, and brand behavior	Communicated through experiences, engagement, abstract qualities, messaging, tone of voice, visual identity, and brand
Examples	Michelin Man, Geico Gecko	Harley-Davidson (rebellious, rugged), Apple (innovative, artistic), Nike (athletic, inspiring)	Wendy's Twitter (sarcastic, argumentative, irreverent), Ryanair (recognition and embrace of why customers select them)
Representation	Explicit characters that walk, talk, and act like humans	Subtle and integrated across all brand touchpoints	Involves all aspects of brand communications, both intentional and unintentional
Function	Makes products more memorable and emotionally engaging through character-driven storytelling	Helps consumers relate to and choose brands based on identity alignment	Helps consumers form relationships and gauge expectations of responsiveness and communication with brands

Brand animacy provides two potentially important insights into maximizing value in brand communications. First, brand animacy allows for clear and effective communication of brand personality and other related traits. Fournier (1998) describes two phenomena associated with brand animacy communications, first that people's perceptions of products are shaped by the humans associated with the acquisition of the item ("gifts are likely infused with the spirit of the giver" (p. 345)), and second that consumer-brand relationships mirror interpersonal relationships. In fact, these consumer-brand relationships can be even more vulnerable since "our affection towards a brand cannot be rejected by the brand itself" (Lieven, 2017, p. 5). Despite viewing brands as possessing animate attributes, consumers do not view brands as identical to humans. Using functional magnetic resonance imaging, Yoon et al. (2006) demonstrated that different portions of the brain are triggered when consumers are prompted to think about either brands or individual humans. More recent work on the perceptions of brands as having human-like attributes such as the "human brand associations" proposed by Oklevik et al. (2020) propose that the living traits that consumers ascribe to brands are a result of their perceptions of humans associated with the brand, whether mascots, employees, or brand users.

Maehle & Supphellen's (2011) efforts to find the source of brand personality supports this three-stage semiotic view, as they describe "company-level sources", "symbolic sources", and "consumer-based sources" as being factors driving perceptions of brand personality. Each of these three categories can be applied to animacy via three layers previously proposed for the aesthetic view of branding. All three layers of brand aesthetics can contribute to perceptions of brand animacy. The design of products can invoke natural or organic forms and imply personalization or mass production, communications can shape perceptions of the brand as a whole or specific products using natural language or anthropomorphic figureheads, and the experience of using and consuming the product or service can contribute to the consumer's identity or perceptions from others (Saito, 2007). The connections among these forms of analysis are displayed below in figure 2.

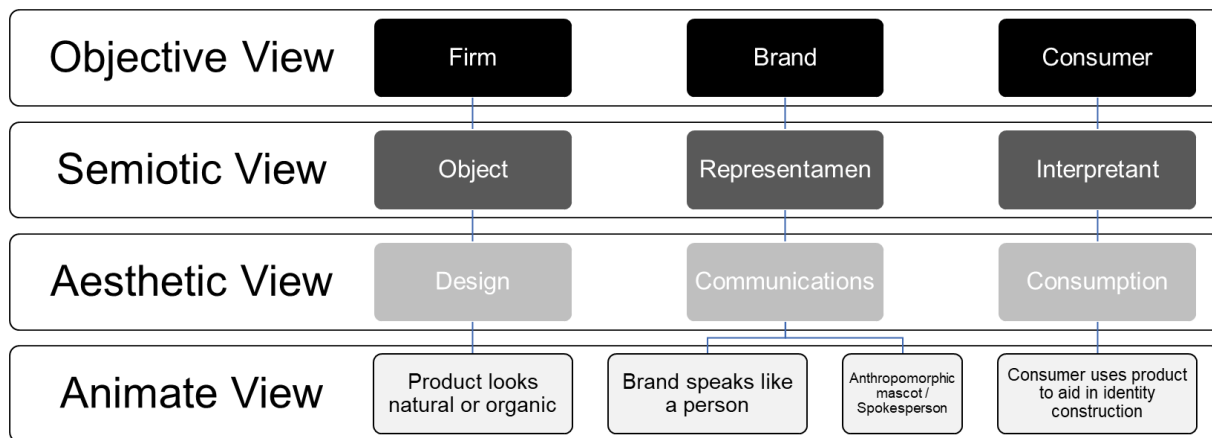


Figure 2: Relationships between Semiotic, Aesthetic, and Animate view of brands

It is unlikely that animacy functions directly to shape consumers' perceptions of brands, more likely it functions indirectly to shape how consumers perceive the brand. I have added the relationships that I propose exist between aesthetics, semiotics, and animacy onto the earlier model, resulting in figure 3.

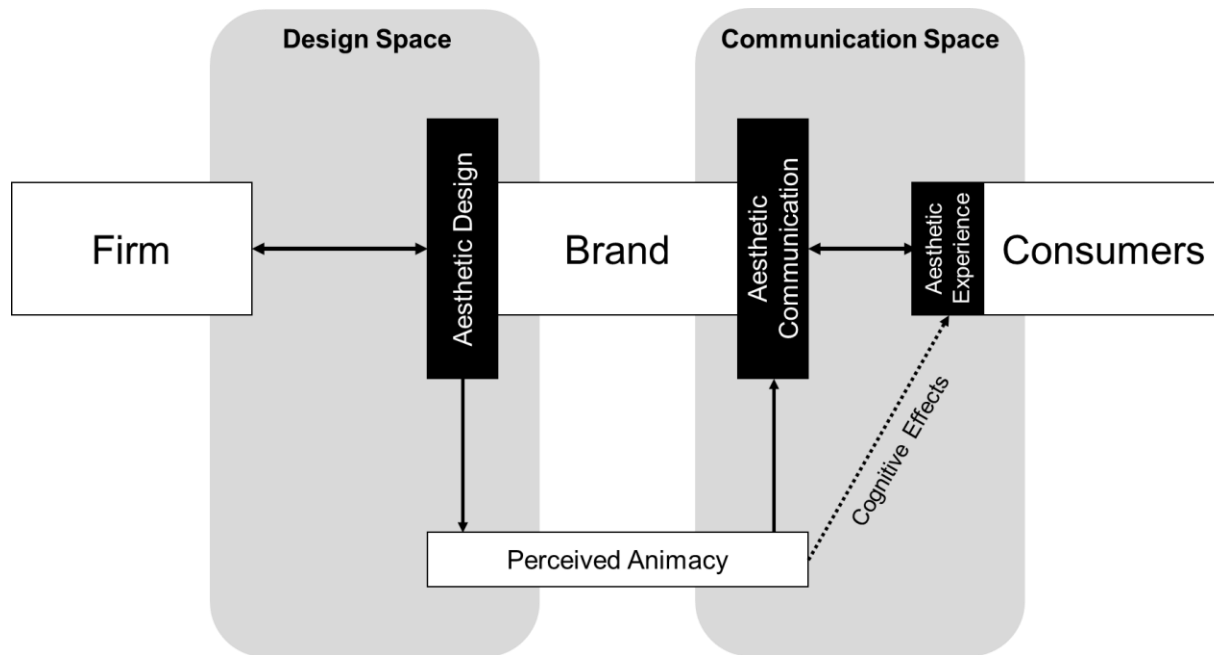


Figure 3: Animacy's role in brand communications

Based on previous findings, I believe that the best way to represent the effects of brand animacy is through the aesthetic experiences that consumers will have with the brand. Each aesthetic layer acts as a filter that abstracts the firm from the consumer. I will use the example of IKEA to illustrate this process. Aesthetics in product design form the basis for how the consumer will ultimately experience the product and provide the framework for how a brand will be experienced. For IKEA, this is captured in the aspects of crisp, elegant, utilitarian decorative design merging with the functional elements requiring customers to assemble the products themselves. Next, the aesthetics of how the brand communicates to consumers adds the next layer. Here, consumers encounter Scandinavian names for most IKEA products, affordable prices, and an elaborate shopping experience of labyrinthine stores with a surprisingly well-known and appreciated food court. Finally, the aesthetics of consumption bring an even greater number of associations to the customer's experience. The customer navigates the IKEA store marking their purchases on a form, goes down through the purchase process to a warehouse-like

environment to collect all of the pieces for their furniture, and heads home to assemble it. How the furniture looks in their living space and whether it lasts a long time or breaks after a few months shapes their perception of the brand even after the economic transactions have been completed. Animacy influences the process at each stage. Even for a brand with zero anthropomorphic elements, and a relatively impersonal image, there are factors at play that can influence consumer's perceptions of IKEA as an entity. Consider the Scandinavian elements. On their own the role they play other than differentiation is hard to see. The product names might be difficult to pronounce or remember, and the product category of budget furniture does not seem likely to benefit from projected exoticism on its own. What it does is give the brand a geographic identity. The brand "lives" in Scandinavia. A polite salesforce invokes positive stereotypes. A food court serving affordable vaguely Scandinavian food implies hospitality. All of these elements are coherent and shape a consumer's perception of the brand. After a trip to the store, a consumer might easily think "IKEA was polite and hospitable towards me". Not only is this a positive experience on its own, but it also will be an effective memory that will make the brand easier for the consumer to recall.

V. Empirical Testing

Social media is an ideal arena to explore brand animacy, as it allows for more direct interaction between users and brands that approach interpersonal behaviors. Consumers are more likely to interact with brands close to their self-identification (Wallace, et al., 2017). Just as individuals can employ branding strategies for personal success much more readily on social media (Kanai, 2019), so brands can adopt a much more personal image (Freire, 2009), (Semple, 2012). Twitter was chosen as the social media platform for analysis for two reasons. First, Twitter has high levels of brand community identification and membership intention (Phuaa, et al., 2017), and second, the text-based nature of Twitter allows for easy quantitative analysis of

user-brand interactions including as a source for monitoring both real-time and longitudinal perceptions among consumers (Rust, et al., 2021). Past research has further demonstrated that linguistic choices around branding significantly impact consumer perceptions in a social media environment, including the signaling of authenticity (Zhang & Patrick, 2021), and the ability of paralinguistic cues to mark the intensity of feedback (Luangrath, et al., 2023).

The first research question is to explore how perceptions of animacy correlate with consumer engagement, a priority due to higher levels of social media engagement corresponding with better sales (Castillo, et al., 2021). If a correlation is found between animacy and engagement, it becomes important to know if the perception of animacy is an easily controllable factor for brands. As an initial step, the second research question will explore whether consumers ascribe higher animacy to brands that they like, using Tweet sentiment as the measure of consumer perception (Rust, et al., 2021). Both absolute sentiment and polarity of sentiment will be monitored. Higher polarization may appear instead of simply higher absolute sentiment for three reasons. First, animacy might increase the overall volume of interaction and expected responsiveness by being perceived as offering an avenue for stronger social connection (Powers, et al., 2014). Second, consumers may perceive a more animate account as being emotionally responsive, and act more politely to avoid damaging its “face” (Ueki, et al., 1994). Third, although consumers perceive the account as more animate, it might not rise to their own level of animacy, meaning not all who interact will perceive the account of deserving equal respect (Chen, 2012).

Data Collection

The dataset collected for this project contains the Twitter interactions for 241 brands during 2019. All English language tweets from the brand accounts, tweets tagging the brand

accounts, and replies to tweets from the brand accounts were collected using the Academic Track Twitter API. 2019 was selected as the year for analysis as the last fully pre-COVID year. Brands were selected initially using the 2019 Forbes 100 list. This initial list was increased by selecting close competitors with the highest Twitter follower counts. To ensure sufficiently diverse industry representation, the list was completed by adding additional brands (again selected by highest follower count) so that each NAICS sector represented by the initial list included at least 10 subjects. The final dataset results in 182,572 tweets from brands, 3,355,709 replies to brand tweets, and 5,566,899 tweets tagging the brands. Tweets simply retweeting brand tweets with no additional content were excluded from the study.

Animacy Tagging and Measurement

The biggest technical hurdle of this project is devising a way to measure how consumers perceive the animacy of different brands. Processing animacy computationally is not a new realm, though past efforts have focused on, rather than using language to determine perceived animacy as is the project of this paper. There are two general approaches which can be used for measuring animacy computationally. The most common approach deployed in past research focuses on assessing the animacy of words or phrases directly present within a text (Zaenen, et al., 2004) (Jahan, et al., 2018) (Jahan, et al., 2021) (Westbury, 2023). For example, instances of the word “squirrel” used as a noun would be tagged as belonging to the animacy category of animal, while instances of the word “thought” used as a noun would be ascribed to the animacy category of incorporeal. Since the purpose of this paper is to measure perceptions of animacy rather than literally displayed animacy, this first approach is insufficient. The second approach used to computationally measure animacy in text relies on the surrounding linguistic context. This can be achieved either through carefully coding flags based on the grammatical traits of

animacy as documented by linguistic scholars such as Dahl and Fraurud (1996) or Yamamoto (1999), or by applying large language models (LLM) or other machine learning techniques as demonstrated by Bloem and Bouma (2013) and Coll Ardanuy et al. (2020). While a flag-based approach theoretically provides the highest degree of confidence in categorization, it faces two critical flaws that limit its effectiveness for the current project. First, while a flag-based system will rarely make incorrect classifications, Tweet length data limits the amount of information such a system would have to make decisions, therefore resulting in a large amount of data that cannot be conclusively categorized. Second, for a flag-based system to function at maximum efficiency, the input data must be relatively close to formal or at least historic uses of language. This is again an assumption that Twitter data cannot be consistently expected to meet. As a result, an LLM approach emerges as the most effective solution.

While attempting to measure perceptions of animacy from social media data represents a question which has not previously been addressed, two critical parts of the solution are heavily influenced by previous studies. The first is the use of the BERT (Bidirectional Encoder Representations from Transformers) LLM (Devlin, et al., 2019). The “Living Machines” project (Coll Ardanuy, et al., 2020) makes use of BERT with a specialized corpus to predict whether nonliving objects (specifically machines) are being portrayed as possessing a higher degree of animacy. The exact code built for the “Living Machines” project outputs animacy predictions as binary results along the dimensions of animacy and humanness. Since the brand animacy project is interested in predicting animacy across a more continuous range, a slightly different BERT approach must be taken. Since this project is concerned with the common usage of language and not focused on any more restricted corpus, the basic pre-trained BERT model developed by Devlin et al. (2019) can be used without modification. BERT functions by predicting what word

most likely occupies a specified position in a sentence. This functionality shares a similar concept (though very different underlying approach and ability) with search suggestions that appear while a user is typing, with the important difference that BERT takes into consideration both the content appearing before and after the specified blank it is asked to fill. In this study, BERT is deployed onto tweets tagging branded accounts. In each tweet, the brand's handle is masked and BERT returns a list of common words likely to occupy that masked location alongside a score indicating the strength of each suggested word measured from 0 to 1. All suggested words with a score above 0.1 are saved along with their score.

While the BERT algorithm provides the best combination of flexibility and transparency, it is not without limitations. The BERT model is only able to provide animacy tagging for a fraction of the tweets in the dataset, with many returning indeterminate results, or predictions below a set level of confidence. Because of the scale of tweets being explored in this project, this limitation can be overcome by volume, but does present challenges to deploying this approach in practice into a live social media environment. These limitations result from two sources: those inherent to the model itself, and those resulting from the particular use of Twitter data. As the name indicates, the BERT model is a transformer-based LLM, sharing core architectural similarities with the current frontier of generative AI tools such as ChatGPT. In theory, the exact same approach could be executed using any of the current generation LLMs, likely with an even higher success rate. However, these models are far less transparent than the BERT model, so initial validation using the BERT model is important to demonstrating effectiveness. Once this effectiveness is demonstrated, future steps would include repeating this research using current generation models. The second limitation source is simply due to the extremely small amount of linguistic data which may be present in a single tweet. Given the informal nature of most writing

on Twitter, significant meaning and even linguistic markers are frequently communicated by non-textual context clues which are outside the scope of this project. This limitation is far harder to overcome through advances in LLM models alone (although they may have increased sensitivity which provides beneficial improvements around the margins). Overcoming this limitation will require validation through multiple channels in future extensions, either using some of the alternative animacy tagging methods (such as human coding) or by adding datasets from more information rich platforms (such as Instagram).

The next step in the process is to determine the animacy associations of each suggested word. This is completed using the WordNet lexical database. WordNet provides a wide array of semantic and linguistic features for most types of words (Miller, 1995), and has previously been used to measure animacy by taking advantage of the hierarchical categorization the database provides (Ji & Liang, 2018). While WordNet has been used for animacy research before, as with BERT, the exact use differs significantly on this project. Ji and Liang’s use of WordNet focused on measuring animacy of a very specific and understudied subset of words, while measuring brand animacy requires a less granular—but broader—focus. This is easily accomplished, as WordNet’s hierarchy includes categories that map perfectly onto general models of animacy (Cherry, 1992). For example, WordNet’s “physical_entity” maps to the animacy hierarchy’s “inanimates”. Each term saved from the BERT suggestions can be fed into WordNet, and a hierarchical list of what all word categories the term belongs to returned. This returned list can be converted into an animacy category by marking the first occurrence of one of the categories that directly corresponds with one of the animacy hierarchy’s five major divisions³. It is critical that it

³ WordNet|Animacy: person|humans; animal|animals; plant|plants; physical_entity|inanimates; abstraction|incorporeals

is the first occurrence which is marked, as any WordNet instance of a “person” or “plant” will have a more general categorization of “physical_entity” as well. All suggested terms from BERT receive at least one of the five indicated categories from WordNet, except for pronouns, as pronouns are not included in WordNet’s database. This exception is easily handled, as all common pronouns feature centrally in most major linguistic studies of animacy (Cherry, 1992) (Dahl & Fraurud, 1996) (Yamamoto, 1999). All personal pronouns (and their variations) were manually loaded in and coded as either *person* or *people*, and *it/its* were coded as *object* in keeping with WordNet philosophy of coding words according to their lowest absolute classification. Figure 4 displays two examples created to show the workflow from Twitter to BERT masking to WordNet categorization.

<u>Tweet:</u> "I had a great lunch at @McDonalds restaurant today!"			<u>"I had a great lunch at @McDonalds today!"</u>		
<u>BERT INPUT:</u> "I had a great lunch at [MASK] restaurant today!"			<u>"I had a great lunch at [MASK] today!"</u>		
	<u>BERT Prediction</u>	<u>WordNet</u>		<u>BERT Prediction</u>	<u>WordNet</u>
	our 0.34501	person		home 0.48107	physical_entity
	his 0.20452	person		work 0.28866	abstraction
	parents 0.11273	person		school 0.18624	physical_entity

Figure 4

Experimental trials reveal that approximately 5%-10% of brand tags are classifiable using the BERT algorithm, as the algorithm requires the user to have used the brand’s tag in place of a traditional part of speech in near-sentence form. The majority of tweets which cannot be classified are the result of tagging the brand in an image or emoji only post, or including the brand’s tag outside the tweet’s grammatical structure (e.g., “I can’t wait for holiday sales!” @McDonalds @Target @Amazon” would not be tagged as the three tags exist outside of the discernable sentence structure).

VI. Results

Due to the computational intensity of the prediction model, a random 10% sample of all tagged tweets (556,000) is used for analysis. This sample has been fully processed using the BERT algorithm, resulting in 27,457 predictions that can be classified according to their animacy. All processed tweets were also measured for their sentiment using the R package *sentimentr* (Rinker, 2021), which was selected for use at this stage due to its past effectiveness for Twitter datasets (Ikoro, et al., 2018), and its ability to measure sentence level sentiment instead of individual words (Kiliç & Çadirci, 2022). This second advantage is especially valuable when attempting to measure perceived animacy based on sentence context.

The *sentimentr* package was used to calculate both sentiment and polarity results for each tweet. Sentiment measures positive and negative emotions on a scale that records a perfectly neutral sentence as having a sentiment score of zero. Polarity is effectively the strength of the emotions in either direction, and is calculated by taking the absolute value of the sentiment score. The relationship between perceived animacy and both sentiment and polarity can be measured using one-way ANOVA tests. Each tweet is assigned to the animacy category belonging to the BERT prediction with the highest probability, in the same manner as Ji & Liang (2018) with the addition of BERT. Results of the ANOVA tests using SPSS can be seen in table 1. There was a statistically significant difference between groups for both Animacy and Sentiment ($F(4, 27453) = 50.954; p < 0.001$) and Animacy and Polarity⁴ ($F(4, 27453) = 42.131; p < 0.001$).

⁴ Polarity is labeled AbsoluteSentiment in SPSS output

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Sentiment	Between Groups	35.888	4	8.972	50.954	<.001
	Within Groups	4833.946	27453	.176		
	Total	4869.834	27457			
AbsoluteSentiment	Between Groups	18.183	4	4.546	42.131	<.001
	Within Groups	2962.038	27453	.108		
	Total	2980.221	27457			

Table 2

Using a Tukey post hoc test reveals further details of the significance between the groups, as shown in table 2⁵. Most importantly, there is statistical significance between clearly living and motile animacies (human and animal) and non-living animacies (inanimate and incorporeal) for both Sentiment and Polarity. Tweets tagged with human animacy have both sentiment and polarity significantly higher than inanimates ($p = 0.000$; $p = 0.000$) and incorporeals ($p = 0.000$; $p = 0.000$). Tweets tagged with animal animacy also both have sentiment and polarity significantly higher than inanimates ($p < 0.001$; $p < 0.001$) and incorporeals ($p = 0.005$, $p < 0.001$). Findings of relationships between either group and plants are not significant. One somewhat unexpected significant finding is that inanimates have a sentiment mean significantly lower than incorporeals, which contradicts a strict expectation based on the animacy hierarchy. While the difference between living and motile and nonliving is the focus of this study, this finding may be interesting to track and develop if it appears elsewhere. Due to the perceptual similarity between inanimate and incorporeal in this context, my initial expectation is that it has no theoretical significance either here or elsewhere.

⁵ Animacy is labeled numerically in SPSS output: Human = 1; Animal = 2; Plant = 3; Inanimate = 4; Incorporeal = 5

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Animacy	(J) Animacy	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Sentiment	1	2	-2.186864E-2	3.141282E-2	.957	-1.075614E-1	6.382416E-2
		3	2.816873E-2	3.771392E-2	.945	-7.471317E-2	1.310506E-1
		4	1.302013E-1*	1.030910E-2	.000	1.020785E-1	1.583240E-1
		5	8.183101E-2*	9.995427E-3	.000	5.456393E-2	1.090981E-1
	2	1	2.186864E-2	3.141282E-2	.957	-6.382416E-2	1.075614E-1
		3	5.003737E-2	4.724740E-2	.827	-7.885146E-2	1.789262E-1
		4	1.520699E-1*	3.026970E-2	<.001	6.949549E-2	2.346443E-1
		5	1.036996E-1*	3.016432E-2	.005	2.141272E-2	1.859866E-1
	3	1	-2.816873E-2	3.771392E-2	.945	-1.310506E-1	7.471317E-2
		2	-5.003737E-2	4.724740E-2	.827	-1.789262E-1	7.885146E-2
		4	1.020325E-1*	3.676723E-2	.044	1.733169E-3	2.023319E-1
		5	5.366228E-2	3.668051E-2	.587	-4.640054E-2	1.537251E-1
	4	1	-1.30201E-1*	1.030910E-2	.000	-1.583240E-1	-1.020785E-1
		2	-1.52070E-1*	3.026970E-2	<.001	-2.346443E-1	-6.949549E-2
		3	-1.02033E-1*	3.676723E-2	.044	-2.023319E-1	-1.733169E-3
		5	-4.83703E-2*	5.421998E-3	.000	-6.316123E-2	-3.357929E-2
	5	1	-8.18310E-2*	9.995427E-3	.000	-1.090981E-1	-5.456393E-2
		2	-1.03700E-1*	3.016432E-2	.005	-1.859866E-1	-2.141272E-2
		3	-5.366228E-2	3.668051E-2	.587	-1.537251E-1	4.640054E-2
		4	4.837026E-2*	5.421998E-3	.000	3.357929E-2	6.316123E-2
AbsoluteSentiment	1	2	-4.414057E-2	2.458959E-2	.376	-1.112199E-1	2.293876E-2
		3	8.603319E-2*	2.952202E-2	.029	5.498427E-3	1.665679E-1
		4	9.370321E-2*	8.069841E-3	.000	7.168904E-2	1.157174E-1
		5	6.554141E-2*	7.824304E-3	.000	4.419705E-2	8.688576E-2
	2	1	4.414057E-2	2.458959E-2	.376	-2.293876E-2	1.112199E-1
		3	1.301738E-1*	3.698472E-2	.004	2.928108E-2	2.310664E-1
		4	1.378438E-1*	2.369477E-2	<.001	7.320549E-2	2.024821E-1
		5	1.096820E-1*	2.361228E-2	<.001	4.526873E-2	1.740952E-1
	3	1	-8.60332E-2*	2.952202E-2	.029	-1.665679E-1	-5.498427E-3
		2	-1.30174E-1*	3.698472E-2	.004	-2.310664E-1	-2.928108E-2
		4	7.670023E-3	2.878096E-2	.999	-7.084316E-2	8.618321E-2
		5	-2.049178E-2	2.871308E-2	.953	-9.881980E-2	5.783624E-2
	4	1	-9.37032E-2*	8.069841E-3	.000	-1.157174E-1	-7.168904E-2
		2	-1.37844E-1*	2.369477E-2	<.001	-2.024821E-1	-7.320549E-2
		3	-7.670023E-3	2.878096E-2	.999	-8.618321E-2	7.084316E-2
		5	-2.81618E-2*	4.244277E-3	<.001	-3.974000E-2	-1.658360E-2
	5	1	-6.55414E-2*	7.824304E-3	.000	-8.688576E-2	-4.419705E-2
		2	-1.09682E-1*	2.361228E-2	<.001	-1.740952E-1	-4.526873E-2
		3	2.049178E-2	2.871308E-2	.953	-5.783624E-2	9.881980E-2
		4	2.816180E-2*	4.244277E-3	<.001	1.658360E-2	3.974000E-2

*. The mean difference is significant at the 0.05 level.

Table 3

Conclusion

The proposed construct of brand animacy offers great promise towards explaining how consumer-brand relationships are formed, with pathways for further work to empirically validate this relationship and link it to related concepts. Experimental validation and cross-checking will likely prove critical for the full development of brand animacy measures and conclusions. Theoretically, brand animacy offers several advantages over existing constructs through its semiotic and aesthetic explanations which have been explored here. However, there remains a strong possibility to connect it more deeply to other marketing concepts, most importantly Customer-Based Brand Equity (CBBE). While this is the most logical framework for it to be integrated into, that theoretical work remains incomplete. In addition to the value provided by brand animacy to offer theoretical explanations related to customer-brand relationships, it also represents a step in the development of analyzing linguistic functions within marketing. As the validation and integration of brand animacy continues, it is my belief that it will open exciting new directions both for understanding consumer behavior, and in integrating marketing science into new interdisciplinary directions.

Appendix 1: John Cherry's Universal Animacy Hierarchy

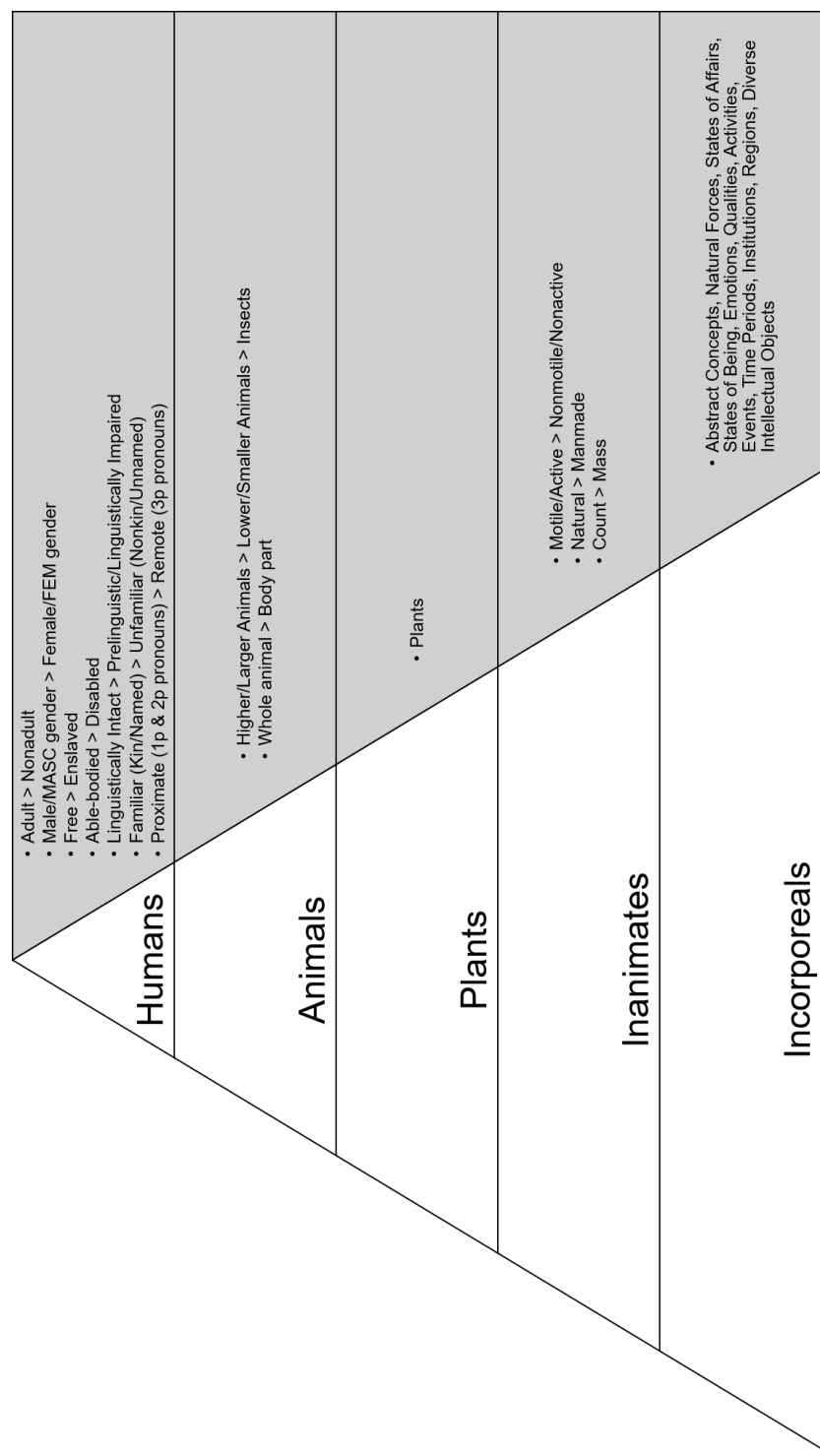


Figure 5 – Universal Animacy Hierarchy (Cherry, 1992)

Ego Involvement and Brand Activism

Introduction

As brands attempt to communicate with consumers and form lasting relationships, the modern interconnected world requires attentiveness to issues and forces outside of the economic realm. Brand activism, the practice of brands making public sociopolitical statements or contributions, has greatly increased in salience over the past decade. Political and social movements frequently reach a level of universal awareness that it becomes impossible for organizations to appear neutral, and are put into the position of either actively making statements about an issue, or having their attempted neutrality perceived by consumers as implicitly choosing a side. While much research has been done on the effects of brand activism for firms and brand image, much work remains in both explaining the psychological mechanisms that lead consumers to respond in the ways they do, and in creating general theoretical models for how these interactions function. This paper attempts to move towards a generally applicable model through creating a categorization of types of brand activism and applying the framework of ego involvement as a psychological mechanism.

This paper will begin by providing a brief introduction to the ways polarizing social and political topics frequently intersect with identity formation. Next a review of existing research into brand activism and brand political speech will be presented. A classification of brand activism will be presented in the following section, exploring the primary categories of responses frequently prompted among consumers. Next, the concept of ego involvement will be introduced, and linked to the previously introduced themes of sociopolitical identity formation. This will lead into the theoretical model being developed in this paper, which focuses on exploring ego involvement as a mechanism which affects consumer responses to perceived brand activism. The final sections of the proposal will outline the research methods, which will be

divided into two sections: a survey portion and an analysis of Twitter data related to reactions towards perceived brand activism from Target and Bud Light in early 2023.

I. Identity Formation

Polarizing social and political issues frequently contribute to identity formation. Facets of identity serve as filters through which political beliefs are processed, either in service of forming an individual's own views or in their interpretation of external events and beliefs (Lodge, et al., 2006). Identity serves a sorting function in political environments, as individuals in similar groups adopt similar politics (Mason, 2018). Social environments and demographic backgrounds significantly affect party identification and sociopolitical beliefs (Kamieniecki, 1985). Race remains one of the dominant factors in political sorting, through both logistical contexts (Ray, 2019) and in reflecting historical racial politics (Perry & Schleifer, 2023). Religion functions as a political sorting factor similarly in multiple directions. For individuals with strong religious convictions, appeals to their morals or beliefs can serve as powerful motivators towards political action (Albertson, 2011) (Adkins, et al., 2013).

Political polarization has increased in intensity, and in many cases electoral extremity, despite many voters holding views that are internally inconsistent (Zingher, 2022). In the U.S., group dynamics serve to drive voter polarization towards both major political parties (Grossmann & Hopkins, 2016). Narratives aid in identity formation, serving to guide individuals towards political priorities and help make sense of contradictory beliefs (Lebow, 2012). These narratives often tap into beliefs rooted in other identity factors, such as race (Perry & Schleifer, 2023) or religion (Sheets, et al., 2011) in ways that both give clear motivations for embracing the narratives and allow the narratives to be linked to historical contexts (Devos & Mohamed, 2014). In addition to helping individuals develop political beliefs based on their own identities, the

identities of others often serve as frames for developing beliefs about other groups (Winter, 2008) (Stewart, et al., 2018), a trend especially prominent in the recent emergence of right-wing populism and ethno-nationalism (Bonikowski, 2017) (Bonikowski, et al., 2021). Partisan identification drives political involvement to a stronger degree than individual perspectives on particular issues (Huddy, et al., 2015) (Park, 2018), with the intersections of political identity with other forms of public identity serving to amplify polarization (Perry, 2022) (Perry, 2023).

II. Brand Activism & Political Beliefs

While large segments of consumers want brands to take stances on sociopolitical issues (Vredenburg, et al., 2020), marketers remain cautious of the appropriateness of these actions (Moorman, 2020). As anger appears to be the strongest emotion driving political engagement, brands have good reason to be cautious of their involvement with sociopolitical issues (Valentino, et al., 2011). Even attempts at avoiding politically charged statements may be interpreted by sections of consumers as taking a controversial stance, as in grassroots efforts beginning in late 2023 to boycott Starbucks for allegedly being anti-Palestinian. This reaction stemmed from a corporate directive asking a particular unionized Starbucks to remove pro-Palestine decorations which violated store branding standards. While the incident may fit broadly into ongoing conflicts around Starbucks unionization, there are no indications that the corporate directive was intended to take any position on the issues of Israel and Palestine.

With authenticity as the strongest factor affecting responses to brand activism (Mirzaei, et al., 2022), this disconnect between desire for brands to take action and brand unwillingness to stake out positions originating from their own convictions can lead to brands engaging in activism in ways that harms their relationships with consumers. “Woke-washing” can occur when brands attempt to inauthentically capitalize on consumer values without truly supporting the causes

(Warren, 2022), which in addition to de-legitimizing the brand to consumers, can even lead to negative consequences for the causes they nominally support (Sobande, 2020). The evolution of authentic brand activism tends to follow a pattern through which a small number of brands or marketers will first take a risk on supporting a cause they genuinely believe is important, and then if consumer sentiment settles in support of these early efforts, other brands will feel more comfortable following (Middleton & Turnbull, 2021).

Two broad scenarios exist in which market actors may engage in practices falling under the phenomenon of brand activism. The first type of scenario encompasses instances when a brand takes a proactive stance on a sociopolitical issue, such as Nike's 2018 campaign built around former NFL player Colin Kaepernick focused on racial equality. In this instance, had Nike not executed this campaign, they would not have been perceived as taking an active position on racial issues. When the campaign was initiated, there was no expectation for major corporations to take a vocal stance on issues of racial equality, to the extent that what criticism Nike did receive for the campaign was from sources claiming that Nike was stoking conflict where none previously existed. Even many positive reactions to the campaign focused on its unexpected nature. In contrast, a second, reactive, type of scenario can be seen in instances where a brand not taking a vocal stance on a sociopolitical issue could be perceived as them implicitly taking a stance. Examples of this can be widely drawn from Black Lives Matter messaging in 2020 following the death of George Floyd. As public and corporate sentiment in support of the movement increased in salience, many brands reached a point where continued silence would be perceived by many of their customers as rejection of the movement (Guha & Korschun, 2023).

Additionally, brand activism is not always intentional on the part of the brand. Featuring LGBTQ individuals or families in advertising campaigns may not be consciously a sociopolitical

statement on behalf of a brand, it may simply be an attempt to create marketing materials that reflect their consumers. In an increasingly diverse mainstream culture, the thought that such portrayals may be perceived as a nefarious attempt to advance some “gay agenda” (Dowland, 2009) may not even cross marketers’ minds. And yet to many conservative Christians, such portrayals will immediately cause them to perceive the brand as taking an active stance on a sociopolitical topic (Casidy, et al., 2021), and may be enough to lead them to boycott the brand (Elizabeth, et al., 2017).

Most previous research into brand activism has primarily focused on negative reactions, both those where consumers agree with the purported stance but find the brand’s adoption of the issue to be either inauthentic or exploitative, and those where consumers find the sociopolitical stances taken by brands as offensive. The two primary drivers of consumer response to brand activism are affective and cognitive, with the most positive effects occurring when the brand activism supports a cause that the consumer views favorably as opposed to attacking a cause the consumer views unfavorably (Garg & Saluja, 2022). Consumers may be dissuaded from buying from a brand with different values than them, but convincing customers to support a brand simply because they oppose similar positions appears far less frequent.

Research on brand activism as a whole suggests that generally the negative effects pushing existing consumers away will outweigh positive effects from attracting new customers, although this may be dependent on market share, with brand activism having more positive results for brands with less market share and more harmful for those with large market share (Hydock, et al., 2020). For larger firms, high equity brands appear more successful at capitalizing on brand activism than low equity brands, as brands without strong recognition and identity have a much more difficult time convincing consumers of the authenticity and importance of their messaging

outside the product itself (Ahmad, et al., 2022). Recent advancements in consumer culture theory propose that consumer expectations from market actors best fit into a logic of “conflict markets”, where market actors are incentivized to participate in polarizing cultural and political battles in ways that attract some consumer subsets while pushing others away (Ulver, 2022). Because reactions towards brand activism rarely create perfectly mirrored effects, this focus on negative responses has left positive responses relatively understudied.

III. Classification of Brand Activism

Since brand activism can prompt such a wide range of responses from consumers and the structural intentions of such campaigns vary greatly from firm to firm, it may be helpful to adopt a classification structure for brand activism. Based on the two dimensions of intentionality and responsiveness that frequently appear in discussions around brand activism and authenticity, a simple classification scheme can be assembled that seems to capture and distinguish between the most common consumer responses.

Table 4 - Classification of Brand Activism

	Proactive	Reactive
Intentional	<i>Innovators</i>	<i>"Woke-Washers"</i>
Incidental	<i>Mainstream Majority</i>	<i>Delayed Supporters</i>

The first category of brand activism are the “innovators”, which represent brands that intentionally and proactively take a stance on a particular issue before most other firms. Frequently, these stances will be driven by the organization truly believing in the rightness of the cause, and their responsibility to take a stand. For campaigns in this category, the early adoption

of the cause can often be seen by other firms at a later point as proof that a brand can take a position on the given issue without facing consumer wrath (Middleton & Turnbull, 2021). This category will typically be received as authentic by consumers, and so is best positioned to capitalize on the positive outcomes of brand activism. The largest risk for campaigns in this category comes from consumers who disagree with whatever position the brand takes.

The second category of brand activism can be labeled as the “woke-washers”. While it is important to note that the positions being advocated for need not fall into popular definitions of “woke” for a campaign to fit into this category, the label is an effective descriptor that captures the mechanisms leading to such campaigns (Sobande, 2020). For campaigns in this category, the brand’s decision to take a sociopolitical position is intentional but much more reactive than those of the “innovators” category. A brand that sees others having success with consumer response to brand activism around a particular issue may decide that they should adopt a similar approach as a marketing strategy. Frequently, decisions to engage in brand activism under this category are based on what seems most likely to sell to consumers, not because of personal convictions among decision makers (although the two are not mutually exclusive). Because these campaigns are often constructed as marketing strategies first, there is a much greater risk for consumer backlash because of inauthenticity if the execution is not ideal. At the same time, since the brand is still taking an intentional stand on an issue, there is still substantial risk from consumers who disagree on the sociopolitical topic.

The third category of brand activism is “mainstream majority”. For campaigns in this category, the brands typically make a conscious choice to portray a stance on a sociopolitical issue, but taking that stance is not the primary focus of the campaign. Examples from this category include portrayals of LGBTQ individuals in advertising, where the intent isn’t to

advance a particular agenda, but more accurately reflect the identities and lives of their consumers. Rarely will campaigns in this category be able to generate strong positive effects related to brand activism, as for both the brand and consumers with similar sociopolitical beliefs, there is not an explicitly political statement being made. While the positive effects are blunted, so is the likelihood of appearing inauthentic, reducing the risk from consumers agreeing with whatever sociopolitical position is nominally included. There is still a risk of backlash from consumers who oppose whatever position is being portrayed (Casidy, et al., 2021), but this group is likely to be smaller than consumers opposing more active forms of brand activism.

The fourth category of brand activism is the “delayed supporters”. In this category, brand activism is both incidental and reactive, and typically occurs when a sociopolitical topic reaches an extremely high level of cultural salience where not taking an explicit side is perceived as implicitly taking another. Many of the racial justice campaigns launched by brands in 2020 fall into this category (Guha & Korschun, 2023). Authenticity is the greatest risk for brands in this category, since not only are the brands reacting to outside circumstances, but the need to take a position often forces brands to move faster in execution of such campaigns than would be preferred. There is a risk of backlash from consumers who disagree with the sociopolitical position, but this risk is likely to be lower for two reasons. First, since the brands in this category usually are pushed by consumers and other brands to take a stance, the issues in this category frequently have less controversy around them. Secondly, with many brands all supporting the same or similar positions, even if there is consumer backlash from some corners, it is far less likely to focus on one particular firm.

While many instances can be cleanly categorized, in other instances, brand positions may either straddle the line separating categories or shift between multiple over time as consumer

perception evolves. A brand that makes bold, public statements on social media in the immediate aftermath of a sociopolitical event may initially be received positively as an innovator, but if no material commitments back the brand's initial statements, perceptions may evolve to viewing the brand as having engaged in woke-washing. Nike's 2018 campaign featuring former NFL QB Colin Kaepernick followed this pattern for many consumers, initially viewing the campaign as a bold critique of culture, with positive feelings slowly dissipating as it became apparent that there was no further plans. As cultural perceptions are not monolithic, it is also likely that brands may fall into different categories for different consumers, especially along the axis of responsiveness.

IV. Ego Involvement

Sociopolitical issues frequently exist as linear dimensions where there are two opposing poles that represent the furthest possible positions, with most individuals being able to place their opinion somewhere on the line that forms between the two poles (Bar-Tal, et al., 1994). Although each sociopolitical issue is an independent dimension, they tend to cluster around partisan dynamics so that people affiliated with the same political party frequently share similar opinions across issues. The range of beliefs acceptable in the party and other social networks form group-specific Overton Windows which can fluctuate over time (Suresh & Jeffrey, 2017). From the perspective of brand activism, especially as explored over time (Middleton & Turnbull, 2021), this has significance. What would once have been considered a highly controversial position for a brand to take, such as an advertisement depicting an interracial couple early in the twentieth century, might now be considered entirely unremarkable and apolitical by the vast majority of consumers across the political spectrum. Findings on ego involvement and argument processing may also be helpful for understanding the effects of ego involvement on consumer perceptions of brand activism. Individuals are more likely to rate a news article as biased if they perceive the

source as political opposed to them, regardless of the arguments and information the article actually presents (Kim, 2016) (McEwan, et al., 2018).

Attitude changes directly relate with individual ego involvement, as ego involvement increases, so does commitment to particular positions (Rhine & Polowniak, 1971). Ego involvement has proven a valuable framework for predicting political participation, with the degree of ego involvement driven by the partisan composition and polarity of an individual's personal networks (Knoke, 1990). It can similarly be theorized that the degree of ego involvement will affect how a consumer will respond to brand activism, given that the messages contained in almost every instance of brand activism contain a sociopolitical element.

The concept of what are acceptable views through Overton Windows can be closely tied to the concept of latitudes of acceptance under social judgment theory (Sherif & Hovland, 1961). In this theory, individuals have three zones, a latitude of acceptance, a latitude of rejection, and a latitude of noncommitment, which include all of the messages on a topic that a given individual will accept, reject, or do neither respectively. Figure 1 below shows what these zones might look like for two hypothetical consumers – one more liberal and the other more conservative.

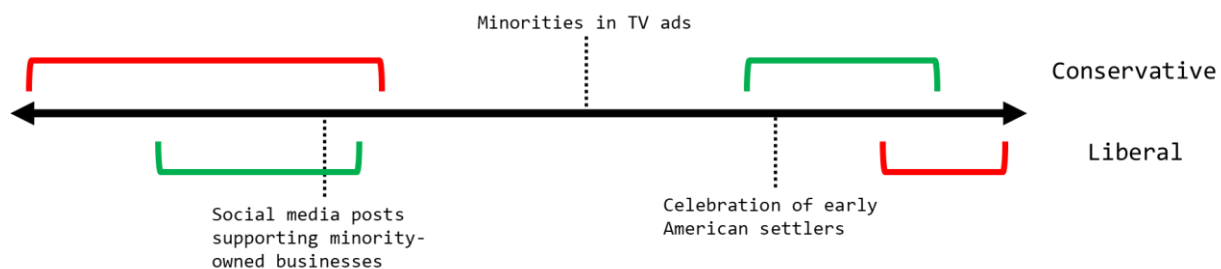


Figure 1 – Latitudes of Acceptance and Rejection

In this figure, the areas marked in green represent the latitudes of acceptance for the respective consumers. If a brand was to make a sociopolitical statement reflecting a position within this

range, the consumer has the possibility of responding positively to that particular instance of brand activism – if they perceive it as authentic. Likewise, the areas in red indicate latitudes of rejection, where the consumers might react negatively to the brand activism. In between, the areas which are not marked, represent their latitudes of noncommitment. Messages falling into this space are likely not to be perceived as attempts at brand activism by the consumers. It is important to note that the latitudes of acceptance and rejection for the two consumers do not mirror one another. What might fall into the latitude of acceptance for the conservative consumer may not fall into the latitude of rejection for the liberal consumer. It is also important to note that these latitudes may not be consistent even for individual consumers across different categories of public life. A consumer might have wider latitudes of rejection for brands than they do for political campaigns or other individuals, believing that brands shouldn't be focused on political issues, even ones that they might not otherwise hold strong opinions on.

Research shows that wider latitudes are related to a higher likelihood of changing positions (Eagly & Tetaak, 1972). For brands, this has two effects working in largely opposing directions. First, this means that brands engaging in brand activism on a topic that consumers tend to have wide latitudes around will likely face less pushback from those opposed, and that maintained over time there is a greater likelihood that positions will change. Secondly, while the risks may be reduced, the potential positive outcomes are also reduced. Since the wider latitudes are associated with greater likelihoods of change, they also tend to feature lower ego involvement initially, and therefore lower likelihoods of attracting strongly positive consumer responses.

V. Theoretical Model

The following theoretical model attempts to propose how ego involvement combines with the two classification dimensions of responsiveness and intent to affect how consumers

respond to instances of brand activism. There are three central propositions which go along with the model:

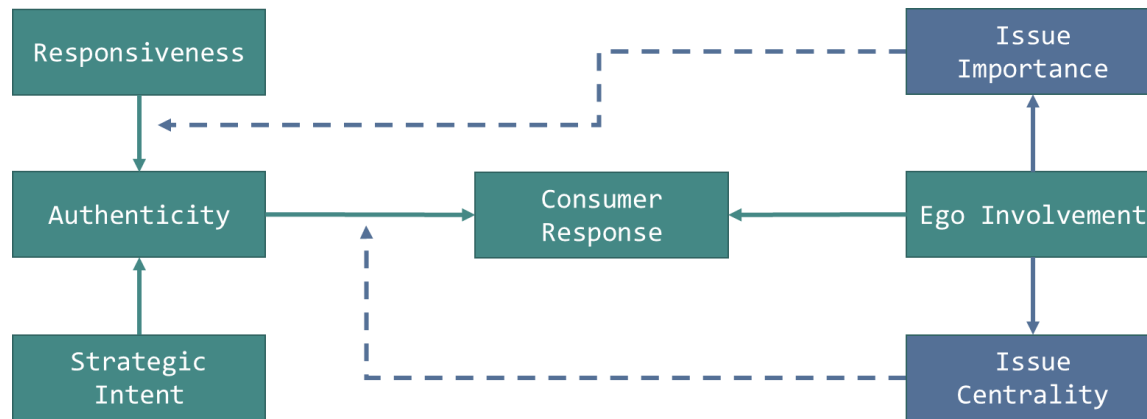


Figure 2 – Theoretical Model

Proposition 1: Responsiveness to issues and the strategic intent of firms affects perceptions of authenticity.

The existing literature is clear that authenticity is a primary contributor to why consumers respond to brand activism in the ways that they do, but the mechanisms which affect authenticity have much less agreement or existing theory. I propose that responsiveness and strategic intent, the two dimensions used for classification in Table 1 earlier, offer one possible explanation which focuses on the decision-making factors over which brands have control. Certainly, the execution of the campaigns also plays a strong role (a well-intentioned campaign may be executed poorly and perceived as exploitative, or an insincere campaign may be executed well and be perceived as authentic), but that role is much more qualitative and primarily functions at a more micro level than this model is attempting to portray with high variance for issue, audience, and industry. Both responsiveness and strategic intent should remain valid inputs across different

campaigns and provide a useful foundation for better understanding what choices made by firms affect the most important variable of authenticity.

Proposition 2: Consumer ego involvement in particular issues directly affect their perceptions of brand activism on those issues.

Based on the literature from political science around the function ego involvement plays on political participation and attitudes toward sociopolitical issues, I believe that consumer ego involvement can be theorized to play a similar direct role in relation to brand activism. As consumer ego involvement around an issue increases, so does the likelihood that they will be attentive and responsive towards brand activism related to that issue both positively and negatively.

Proposition 3: Consumer ego involvement affects their general perceptions of issue importance and issue centrality, which in turn affects their perceptions of brand responsiveness and brand authenticity.

Issue importance and issue centrality are two of the key components of political beliefs as proposed by Bar-Tal et al. (1994), and both are affected by ego involvement. The more ego involvement an individual has with a particular sociopolitical issue, the more likely they are to view it as important and as a core part of their identity (Knoke, 1990). Both factors indirectly affect consumer response in the proposed model. Issue importance affects the relationship between responsiveness and authenticity, since the more important an individual perceives an issue as being, the more aware they will be of brand activism involving the issue. The timeliness with which a brand responds to a given issue will affect how likely the consumer is to view the response as authentic. For consumers who had minimal engagement with the Black Lives Matter

movement prior to 2020, brands making statements about racial justice for the first time that summer would likely not prompt skepticism that the brand was only capitalizing on an issue because of its increased relevance, while a consumer who had been involved in the movement for several years prior to 2020 would likely perceive that brand as being much slower to engage with the issue. Issue centrality has a similar effect on the relationship between authenticity and overall consumer response. For an issue that a customer believes is very close to their identity, the effect of perceived authenticity from the brand will be greatly magnified.

There are two studies in this paper. The first is a survey to examine consumer opinions about brands taking stances on social issues. Participants will be asked about their stance on LGBTQ representation in marketing in general, and specifically prompted about Bud Light's 2023 promotional campaign which featured Dylan Mulvaney, who is a transgender woman.

VI. Study One: MTurk Survey

The first study was completed using an online survey instrument. 961 responses were collected via Qualtrics survey and Amazon MTurk recruitment. After filtering out responses which incorrectly answered the check questions and responses which were submitted in under 90 seconds, 841 usable responses remain. Of the respondents, 70% identified as male and 30% as female. The age of the respondents is 5% 18-24, 70% 25-34, 18% 35-44, 4% 45-54, and 2% 55+. Respondents identified their political alignment as 32% "Very liberal", 15% "Moderately liberal", 5% "Centrist/moderate", 15% "Moderately conservative", 33% "Very conservative", and 1% "Non-political" or chose not to answer.

The following pre-existing scales were used to measure consumer perceptions:

Ego Involvement:

- List potential positions on an issue, and have participants mark their preferred position, as well as all other positions they find acceptable (Sherif, et al., 1965, p. 156). The more rejected positions, the higher the ego involvement.

Issue Centrality:

- Original scale items: (1) “My political attitudes and beliefs are an important reflection of who I am” and (2) “In general, my political attitudes and beliefs are an important part of my self-image.” (Federico & Ekstrom, 2018). Modified to ask about particular issues.

Issue Importance:

Ranked ordering of issue importance, including all surveyed issues plus other standard political concerns (budget, immigration, etc). Issues are pulled from Gallup’s running survey on the most important problems facing America (Gallup, 2024). The specific options provided represent all “Non-Economic Problems” which received greater than 1% identification as the most important problem in at least half of the most recent survey waves. Similar topics are combined together.

The final list which respondents will be asked to order is:

- The government/poor leadership
- Immigration
- Unifying the country
- Poverty/hunger/homelessness
- Elections/election reform/democracy
- Crime/violence

- Judicial system/courts/laws
- Ethics/morals/religious/family decline
- Race relations/racism
- Healthcare
- Foreign policy
- Guns/gun control
- Environment
- The media
- Education
- Abortion
- LGBT rights
- Drugs

Research has shown in the contexts of responding to consumer complaints (Stevens, et al., 2018) and service recovery (Davidow, 2003) that timeliness is an important factor in how consumer respond to the firm's attempt to address their concerns. It can be similarly proposed that if a consumer has a concern related to a social issue and expects a brand to take a position, they will expect the response to occur quickly. Evidence from qualitative interviews related to brand activism implies this should be the case (Middleton & Turnbull, 2021).

Results:

Ego Involvement:

The first measure, ego involvement based on acceptable positions, measures the number of acceptable corporate stances on LGBTQ representation, while the second relates to the position respondents find most preferable, with higher values correlating with generally more progressive stances. Because of the ordinal nature of the measures for these questions, Kruskal-Wallis tests are used to measure significance. Mean rank and responses by political group for both measures are reported in table 2, along with the results for issue importance. For ease of labeling, the following tables use ‘1’ to correspond to Very Conservative, ‘2’ for Moderately Conservative, ‘3’ for Centrist/Moderate, ‘4’ for Moderately Liberal, and ‘5’ for Very Liberal.

Table 5 - Ego Involvement & Issue Importance Mean Rank

	Political	N	Mean Rank
EgoInvolvementLGBTQAcceptible	1	273	391.66
	2	124	521.46
	3	43	330.58
	4	127	402.89
	5	265	413.44
	Total	832	
EgoInvolvementLGBTQPreferable	1	271	414.79
	2	122	372.29
	3	42	341.94
	4	124	387.13
	5	263	448.90
	Total	822	
LGBTImportanceRank	1	273	430.12
	2	124	383.70
	3	43	384.94
	4	124	358.07
	5	261	439.74
	Total	825	

For ego involvement based on acceptable positions, a Kruskal-Wallis test finds significance for the difference between mean rank totals of $H(4, 832) = 34.98, p < 0.001$. The mean ranks for each group are not ordered as initially expected, with respondents within the Centrist/Moderate group indicating both the lowest quantity of acceptable positions and the least progressive preference, indicating that at least in this instance ego involvement is not being driven by party affiliation. Post hoc pairwise comparisons are reported in table 3.

Table 6 – Pairwise comparison between acceptable positions by political groups

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
3-1	61.080	38.018	1.607	.108	1.000
3-4	-72.304	40.884	-1.769	.077	.770
3-5	-82.858	38.096	-2.175	.030	.296
3-2	190.882	41.008	4.655	<.001	.000
1-4	-11.225	24.889	-.451	.652	1.000
1-5	-21.778	19.982	-1.090	.276	1.000
1-2	-129.803	25.094	-5.173	<.001	.000
4-5	-10.554	25.008	-.422	.673	1.000
4-2	118.578	29.254	4.053	<.001	.001
5-2	108.024	25.212	4.285	<.001	.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

For ego involvement based on preferred position, a Kruskal-Wallis test finds significance for the difference between mean rank totals of $H(4, 822) = 15.99, p = 0.003$. Post hoc pairwise comparisons are reported in table 4.

Table 7 - Pairwise comparisons for preferrable measure

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
3-2	30.351	40.885	.742	.458	1.000
3-4	-45.185	40.800	-1.107	.268	1.000
3-1	72.851	37.897	1.922	.055	.546
3-5	-106.957	37.974	-2.817	.005	.049
2-4	-14.834	29.142	-.509	.611	1.000
2-1	42.501	24.916	1.706	.088	.881
2-5	-76.606	25.033	-3.060	.002	.022
4-1	27.667	24.777	1.117	.264	1.000
4-5	-61.772	24.895	-2.481	.013	.131
1-5	-34.106	19.781	-1.724	.085	.847

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Issue Centrality:

Table 5 shows the means of Issue Centrality separated by political identification. As expected, Very Liberal and Very Conservative respondents have higher means than more Centrist respondents.

Table 8 - Issue Centrality Means by Political ID

IssueCentrality			
PoliticalID	Mean	N	Std. Deviation
Centrist/Moderate	3.791	43	.6746
Moderately Conservative	4.040	124	.6552
Moderately Liberal	3.886	127	.8687
Non-Political/Prefer not to answer	3.889	9	.3333
Very Conservative	4.266	273	.6474
Very Liberal	4.092	265	.7177
Total	4.092	841	.7205

Conducting an ANOVA analysis with results shown in table 6 indicates a statistically significant difference between groups ($F(4, 827) = 8.852; p < 0.001$).

Table 9 - Issue Centrality x Political ID

ANOVA

IssueCentrality

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.853	4	4.463	8.852	<.001
Within Groups	416.990	827	.504		
Total	434.843	831			

Issue Importance

Issue Because of the ordinal nature of the measures for these questions, Kruskal-Wallis tests are used to measure significance. Mean rank and responses by political group for are reported previously in table 2.

For issue importance, a Kruskal-Wallis test finds significance for the difference between mean rank totals of $H(4, 825) = 17.79, p = 0.001$. Here, the mean ranks are ordered as expected, with LGBT issues being viewed as more politically important to those with more polarized views on both sides. Post hoc pairwise comparisons are reported in table 7.

Table 10 - Pairwise comparisons of LGBT issue importance by political ID

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
4-2	25.633	26.612	.963	.335	1.000
4-3	26.873	37.084	.725	.469	1.000
4-1	72.049	22.692	3.175	.001	.015
4-5	-81.667	22.855	-3.573	<.001	.004
2-3	-1.240	37.084	-.033	.973	1.000
2-1	46.416	22.692	2.045	.041	.408
2-5	-56.034	22.855	-2.452	.014	.142
3-1	45.175	34.380	1.314	.189	1.000
3-5	-54.794	34.487	-1.589	.112	1.000
1-5	-9.618	18.140	-.530	.596	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Several limitations exist regarding this study. First, the most significant limitation is a lack of respondents representing the sociopolitical center. This is a result of the study design that recruited MTurk respondents who were identified as either “liberal” or “conservative”. This leads to a bi-modal distribution of respondent affiliations that is helpful for comparing differences between respondents in these two categories, but is not representative of the entire consumer population. Additionally, while anonymity is provided in completing the survey, respondents may not mark their true beliefs on extremely sensitive social issues. Further research into both the sociopolitical center and more in-depth understandings of consumers’ beliefs would be valuable future extensions.

VII. Study Two: Twitter Case Study

A case study demonstrating the evolution of consumer sentiment over time provides the second dataset comprised of tweets related to Bud Light following the controversy stemming the brand's featuring of influencer Dylan Mulvany, who is transgender. The dataset comprises all tweets⁶ from Bud Light (n = 199), tweets replying to Bud Light (n = 119,709), and tweets tagging Bud Light (n = 33,115) from the date of the initial controversial promotional post until June 10, 2023. Retweets which do not add any new content are excluded from all three datasets.

Tagging of tweets by topic was conducted using the topicmodels R package, built around LDA (Latent Dirichlet Allocation) (Blei, et al., 2003). LDA uses a hierarchical Bayesian model to identify terms which are frequently associated together across a large range of documents. Topics are not pre-defined and are allowed to emerge naturally from the data, with the final "buckets" of terms identified once the data has been sorted. While topics are not pre-defined, a number of desired topics must be provided, which is determined by iterating an increasing number of desired "buckets" until no coherent new topics emerge. Because of the size of the entire dataset and the matrix approach used to calculate term similarities and associations, a random sample of 10% is taken from the combined Bud Light tweets. The initial topic models are generated from this sample. To ensure the robustness of the sample and proposed "bucket" count, the process of sampling and term clustering at the target "bucket" count is repeated to ensure that the topics remain stable. Finally, the remaining tweets can be classified using the results. Table 8 shows the top 50 most prominent terms in each topic:

Table 11 - Top 50 Terms by Topic

⁶ In 2023, social media platform Twitter was rebranded to X. For the purposes of this paper, the site will be referred to as Twitter and individual posts on the site as Tweets.

Rejection_Competition	Gender	Other	Politics	Sports	SuperBowl	Marketing	Other2	Sports_Other	Rejection_Vulger	News
beer	women	budlight	woke	easytoenjoy	market	budlight	budlight	don	budlight	
drink	woman	day	anheuserbusch	cashapp	brand	make	thank	just	bud	
never	tran	time	compani	sweepstak	custom	need	let	like	light	
product	dylan	year	target	sbsweepstak	apolog	now	game	peopl	commerci	
buy	real	one	boycott	cellysweepstak	fire	right	win	want	show	
now	man	come	budweiserusa	watch	sale	money	love	know	say	
budlight	mulvaney	budlightresolut	broke	eagl	back	give	best	think	mile	
ever	support	new	american	chief	campaign	still	friend	good	teller	
another	men	away	stop	home	base	guy	enjoy	fuck	bring	
piss	put	everi	boycottbudlight	parti	lost	well	big	realli	sponsor	
done	girl	week	keep	famili	lose	just	great	one	pride	
won	like	see	gowokegobrok	host	hire	pleas	budlightcellysweep	look	hold	
busch	mental	work	america	hous	stupid	much	chanc	say	bar	
better	use	next	budweis	everyday	mayb	lol	super	thing	lgbtq	
anheus	promot	last	boycottanheuserbusch	none	made	hey	team	tri	keleightel	
budweis	person	today	corpor	philli	billion	got	celebr	everyon	chang	
tast	pretend	first	polit	touchdown	idea	sure	cold	see	countri	
water	face	end	hope	citi	consum	take	part	shit	new	
sell	nike	friday	push	fil	move	away	bowl	way	easi	
even	dress	live	busi	babi	stock	free	easytoenjoysweepstak	make	store	
tranni	ill	wait	boycot	halftim	alissa	way	help	didn	video	
drinker	littl	happi	learn	kansa	job	tweet	enter	doesn	went	
anymor	children	night	foxnew	bengal	ceo	might	follow	even	music	
coorslight	dylanmulvaney	weekend	stand	fridg	new	sinc	giveaway	tell	seen	
millr	hate	pledg	left	couch	decis	gonna	fan	noth	hand	
coor	transgend	month	agenda	sbsweepstak	work	pay	superbowl	care	includ	
bye	femal	tonight	stay	bird	advertis	ask	pick	someth	drag	
drank	insult	pack	abinbev	hubbi	heinerscheid	kidrock	hope	anyon	name	
choic	dude	two	budlightboycott	philadelphia	yet	alreadi	good	sorri	use	
anyway	old	long	take	jamaalcharl	busi	tri	score	hard	case	
mani	male	open	millerlit	cinci	public	post	readi	someon	celebr	
longer	mock	place	conserv	snack	idiot	yes	definit	lot	bottl	
suck	disgust	wow	disney	gooooo	social	run	ice	bad	order	
purchas	gender	back	support	comfort	touch	send	cours	gay	donat	
lite	fake	listen	enough	food	drop	point	amaz	find	organ	
life	celebr	start	kid	current	anheuserbusch	comment	favorit	ass	event	
switch	boy	join	boycottbudweis	goooo	million	feel	footbal	mean	queen	
local	sport	head	cancel	fam	mistak	case	nice	believ	nbcunivers	
bought	biolog	mind	destroy	arod	issu	help	patmcafeeshow	actual	back	
trash	instead	great	list	pizza	share	twitter	fun	luck	fridg	
sinc	actual	crazi	group	easiest	leav	probabl	cheer	mani	call	
also	spokesperson	singl	gowokegobrokebudlight	gooo	includ	start	nft	guy	life	
hors	kid	half	cultur	restock	save	full	awesom	thought	saw	
own	think	final	world	thegoldente	respons	pretti	play	said	age	
stuff	shame	wing	line	woot	alien	guess	sbtvii	seem	carri	
made	communiti	take	happen	definit	media	haven	food	els	sold	
inbev	act	ago	anti	kelc	loss	dollar	famili	guess	enjoy	
hope	repres	room	ideolog	snow	may	late	opportun	call	far	
long	mad	vote	shove	pls	fail	wonder	sign	anyth	rock	
rather	groomer	present	news	westbrook	continu	use	god	feel	coupl	

In this instance, clustering around ten topics reliably produces distinct and identifiable themes among the tweets. Cluster 1, labeled as “Rejection_Competition”, largely tracks posts which indicate consumer intention to switch from Bud Light to a competitor. While for many of the posts in this category the catalyst for switching is still the controversy, these posts frequently indicate a displeasure with the product itself or a preference for another brand. Cluster 2, “Gender”, represents posts which are explicitly targeting Bud Light because of disagreement with what the users perceive as an ideological commitment towards supporting transgender identity. Among frequent themes in these posts are non-sequiturs related to other prominent cultural clashes around trans identity like gendered sports, and right-wing signaling identifying members of the LGBTQ community at large as “groomers”. Cluster 3 contains posts largely

engaging with the brand as usual, although it also includes a number of terms associated with users supporting the brand because of the perceived stance. While this cluster is not particularly focused on a particular theme, it does contain posts generally favorable towards the brand.

Cluster 4 represents posts which are critical of Bud Light as a result of the controversy, but use explicitly political language. Cluster 5 is almost entirely posts related to campaigns launched by Bud Light around specific sporting events or celebrations, mainly the NFL Super Bowl. Cluster 6 contains posts discussing the strategic implications of Bud Light's marketing campaigns, from those attempting to provide objective commentary to those displeased with the perceived sociopolitical advocacy but engaging with it as a marketing campaign rather than conspiratorial attempt to undermine the traditional family or America as a whole. Cluster 7 largely serves as a holding bucket for all tweets which could not be easily classified. These tend towards neutral discussion of Bud Light outside the contemporary controversy. Cluster 8 contains additional tweets engaging with promotional activities, especially around sports, but is much less tied to events like the Super Bowl or specific campaigns in comparison to Cluster 5. Cluster 9 is another batch of negative tweets in response to the controversy but is particularly charged around perceptions or performances of masculinity. It expresses less of a universal moral outrage in comparison to clusters 2 or 4, but views Bud Light's actions as a betrayal of why these particular customers valued the brand. Interestingly, several pieces of vulgar language appear in the most frequent terms for this bucket. Cluster 10 largely contains a discussion of current events related to the brand, from less charged discussion of the controversy to conversations about unrelated celebrity promotions.

The following figures shows how the frequency of tweets associated with each bucket evolved over time. Figure 1 provides an overview of all @budlight engagement from the beginning of

2023 until June 10, 2023. It is important to note several key dates along the charts. By far the highest levels of engagement for @budlight occur around the NFL Super Bowl on February 12.

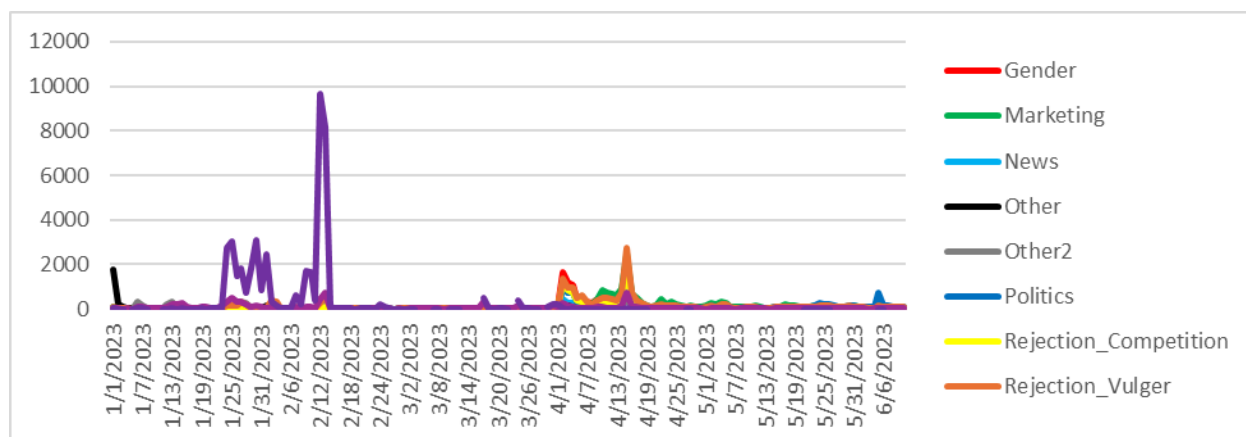


Figure 6 - All Topic Frequency

Figure 2 provides a narrower focus on the range around the marketing controversy. Dylan Mulvaney's initial post for Bud Light occurred on April 1, with reactions following beginning largely on April 2. These reactions most frequently contained posts tagged as specifically relating to gender ($n = 1,668$), followed by posts expressing emotional or vulgar outrage with little particular content ($n = 1,385$), those referencing plans to switch to competitors ($n = 1,209$), those discussing Bud Light's marketing ($n = 1,009$), and those tying the controversy to larger sociopolitical discourses ($n = 968$). While the discussion of the controversy on Twitter declined at a steady rate over the next several weeks, it remained salient enough in external sources that it could be reignited on social media quite quickly. Interestingly, a higher quantity of posts occurred in all negative categories on April 14 in response to Bud Light's eventual PR statement than immediately following the initial posts. While posts specifically about gender ($n = 2,276$) and competitors ($n = 1,844$) rose slightly from their April 2 numbers, posts exhibiting outrage ($n = 2,717$) or discussing Bud Light's marketing ($n = 2,462$) experienced steeper climbs. Although

the posting of a PR statement drew out a significant amount of negative posting, it also appears to have served as a release valve, at least on Twitter, as all negative categories immediately declined the following day to their lowest numbers since the controversy's beginning. As reporting on Bud Light marketing, stock performance, or politician statements occurred over the following weeks, slight bumps can be seen discussing the brand, but with a lower emphasis on the more emotionally and politically charged topics. Additional spikes can be seen near the end of the time period, which were largely driven by Target's somewhat adjacent controversy surrounding Pride month merchandizing, indicating that despite the decline in daily discussion, Bud Light was still linked to corporate activism in the minds of some consumers.

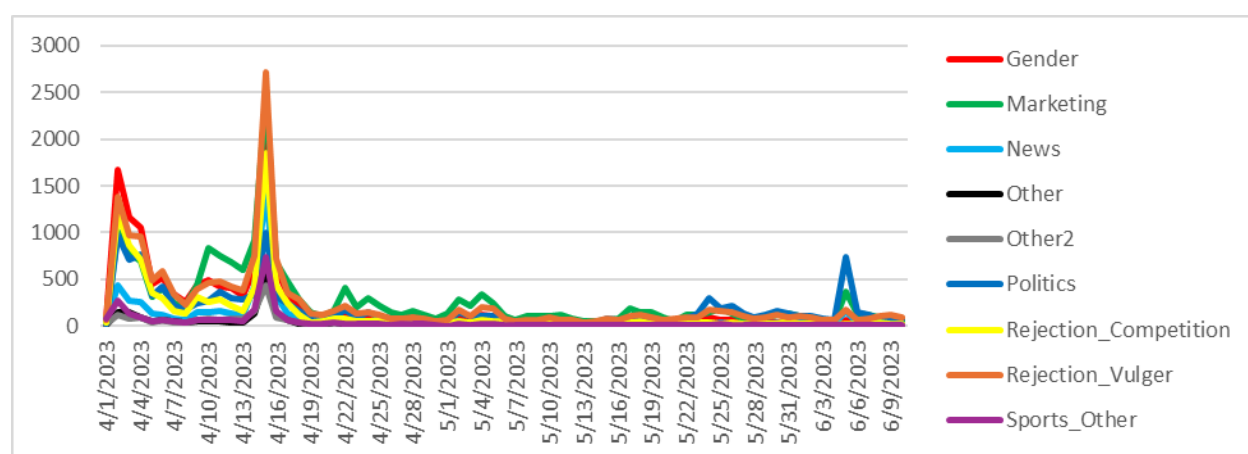


Figure 7 - Controversy Focused Topic Frequency

Figure 3 tracks the cumulative sentiment for Bud Light across the time period. As expected, positive spikes are most significantly associated with activities around the Super Bowl, while negative ones are related to Bud Light's controversy. Sentiment is measured using the R package *sentimentr* (Rinker, 2021), which has been shown as effective for Twitter datasets (Ikoro, et al., 2018) and focuses on measuring sentence level sentiment by taking into account modifiers and

dependencies instead of simply measuring the sentiment of individual words via a dictionary approach (Kiliç & Çadirci, 2022).

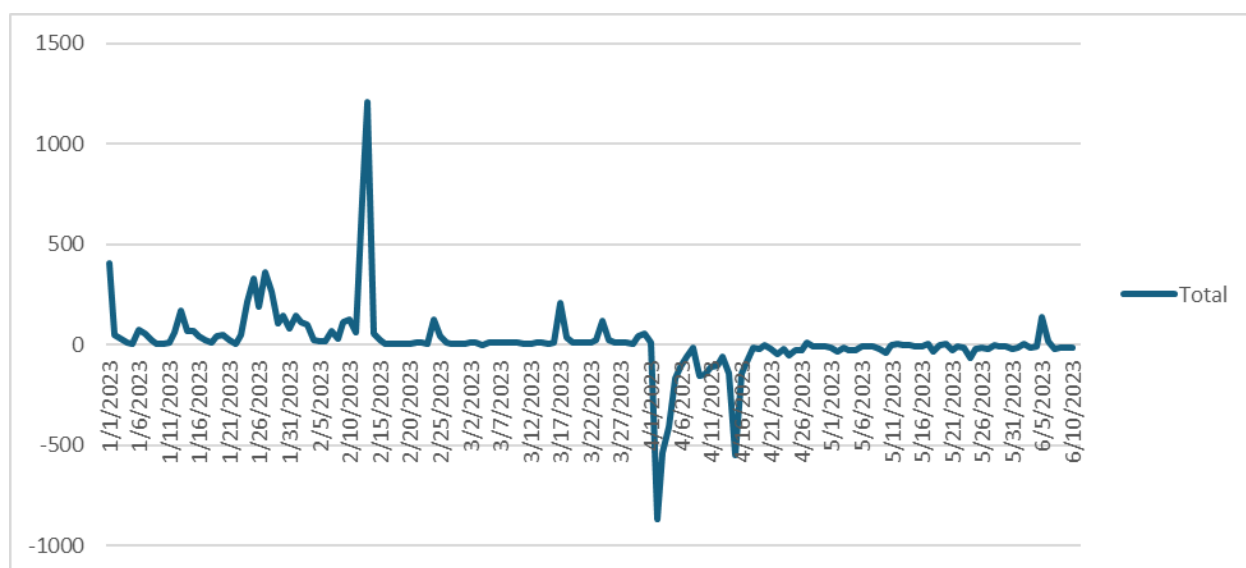


Figure 8 - Cumulative Sentiment

Interestingly, despite a lower volume of posts on April 2 compared to April 14's PR statement, posts immediately following were significantly more negative. Additionally, the spike on June 5 related to Target's controversy actually resulted in a slightly positive spike in sentiment, although it is important to note that sentiment is measured according to the entire tone of a tweet, not specifically in relation to @budlight. In many instances tweets tagged positive here are overall disapproving of Bud Light, but also include references to other occurrences. An example of this trend which was tagged as moderately positive is:

"#music tonight has been exceptional. I'm so thankful for great songs, great artists, great music, and of course, a twinkie and a couple of beers. Nope. No @budlight - I'd rather drink from a shit filled toilet than drink that piss water. It's been a good day :)"

This post and others like it indicate a settling of feelings about the brand, where the purpose of mentioning @budlight no longer serves as an attempt to express outrage at the brand, but instead serves as a signal about the user's beliefs and values, even replacing explicitly political language with longstanding derogatory references towards Bud Light as tasting like urine.

The correlations between time and consumer response as measured by both post quantity and sentiment can be measured using Spearman's Rho. The category of Super Bowl posts is excluded from this analysis, as by nature these posts already have a very strong tie to a particular point in time. Time is measured as the value of days since April 1. Table 9 shows the correlations between the number of days and each of the non-Super Bowl categories, with significant negative correlations for all categories indicating a decline in posts. While this decline is expected due to the early peaks of posting discussed earlier, the differences between the categories are worth noting. Reactions specifically critiquing Bud Light's perceived stance on gender ideology have the strongest negative correlation, likely because these views are based on individual's personal beliefs and convictions which are immediately accessible for them to articulate. In contrast, critiques with a political flavor show the weakest negative correlation, as these posts often occur in response to statements made by external political figures.

Table 12 - Correlation of Posts & Time

			Days	Gender	Marketing	News	Other	Other2	Politics	Rejection_Co mpetition	Rejection_Vul ger	Sports_Other
Spearman's rho	Days	Correlation Coefficient	1.000	-.818**	-.638**	-.544**	-.627**	-.662**	-.343**	-.805**	-.554**	-.732**
		Sig. (2-tailed)	.	<.001	<.001	<.001	<.001	<.001	.003	<.001	<.001	<.001
		N	71	71	71	71	71	71	71	71	71	71

Table 10 shows the correlations between the number of days passed and the average sentiment of posts in this category. All categories related to criticism of Bud Light have significantly positive correlations, as the strength of negative sentiment declines. The Sports_Other category shows a

significant negative correlation, largely due to the migration of commentary around Bud Light's controversy slowly migrating from direct critique to even indirect mentions of the brand. This negative correlation is also due to the fact that Sports_Other posts began at a much more positive average sentiment, so that even as it began to be folded into the larger discourse, the average sentiment for this category remained higher than most others even at the end of the examined period. Also noteworthy is that unlike measurements of raw posts, the two Other categories do not see any significant change in average sentiment over the examined time period. This should be expected, as these categories indicate neutral discussion of the brand which make minimal reference to the controversy. Taken together, the lack of significant correlation on sentiment with the significant correlation on frequency would seem to indicate that even unpolarized engagement is somewhat linked to the controversy's discourse.

Table 13 - Correlation of Sentiment & Time

		Days	Gender	Marketing	News	Other	Other2	Politics	mpetition	ger	Sports_Other	
Spearman's rho	Days	Correlation Coefficient	1.000	.621**	.388**	.493**	-.178	-.073	.498**	.415**	.549**	-.535**
		Sig. (2-tailed)	.	<.001	<.001	<.001	.138	.545	<.001	<.001	<.001	<.001
		N	71	71	71	71	71	71	71	71	71	71

** . Correlation is significant at the 0.01 level (2-tailed).

While not specifically measured in the study because the case of Bud Light is already controversy specifically related in part to perceptions that the brand was abandoning its historic values and audience, the data from the tweets also points towards the involvement of perceived authenticity in consumer responses to corporate sociopolitical activism. Shirdastian et al. (2019) demonstrate that specialized topic-based corpora can be combined with sentiment analysis to measure brand authenticity on Twitter.

Over the past several years, the example of Bud Light has guided much discussion around brand activism to focus specifically on issues of gender and sexuality. While these have certainly been significant areas of attention for both brands and consumers, the framework of

brand activism is not limited to just this issue. Any sociopolitical topic can form the foundation for similar instances of brand activism, especially where there is multipolarity in public opinion. Issues of race, immigration, and geopolitics follow a similar model, with groups of consumers motivated by entirely opposite positions. In the instance of the ongoing war in Ukraine, certain brands have attempted to stake out a position centered on peace activism, rather than potentially partisan elements (Tsoungkou, et al., 2025).

Conclusion

Ego involvement offers a possible lens through which to view how consumers react to brand activism, and when paired with a classification structure allows the formation of a simple model for understanding consumer responses to brand activism. Understanding how consumers are likely to perceive brand activism will allow firms to better predict consumer response, and more carefully plan campaigns that may touch on sensitive sociopolitical topics. Using ego involvement as a framework allows for looking at both direct and indirect effects which occur when consumers' cultural beliefs are challenged or promoted by brand messaging. Additional steps to further the development of a comprehensive framework of brand activism will require the examination and testing of additional specific campaigns, perceptions, and outcomes to see if the proposed model is applicable, and if so, does it appropriately deal with the widest possible range of brand activism approaches. As new sociopolitical topics rise in prominence, this understanding will help aid firms in better serving and communicating with their customers.

Artificial Animacy: Strengths and Limitations of AI Tools for Marketing Communications

Introduction

Following the release of ChatGPT by OpenAI in 2022, suddenly almost everyone had the capability to access advanced tools which could artificially mimic human behavior and language. In the months that followed, many industries experimented with using ChatGPT or similar programs for a variety of commercial purposes. From improving customer service chatbots to reviewing contracts to even generating original content, such tools show potential for improving or automating many critical day-to-day corporate activities. While the overnight accessibility of these tools has led to rapid adoption by many individuals and firms, empirical evidence and theoretical understanding have so far lagged. This paper attempts to address one particular area of application, the generation of consumer facing content, and provide both a theoretical framework and empirical evidence.

This paper will be divided into four sections. The first introduces the major themes around contemporary AI debates which are the focus of this paper. The second section will explore two major communication models, semiotics and information theory, and their theoretical connections to modern uses of artificial intelligence. The third section develops these connections further while focusing on the inherent limitations faced by modern approaches to artificial intelligence. The fourth section presents a methodology for exploring the limitations of artificially generated content through the use of survey data and analysis of social media content.

I. Artificial Intelligence Tools and Controversies

The primary type of artificial assistant tools commercially deployed today are those built around machine learning algorithms trained on massive quantities of human-generated content. As of October 2023, some of the most prominent types of AI tasks are chatbots (ChatGPT, Bard) which respond to written prompts and can create various requested text content, image

generation tools (DALL·E, Midjourney) which take written prompts and output custom graphics, and coding assistants (GitHub Copilot, Amazon CodeWhisperer) which can create custom programming solutions. For all three of these popular genres of AI tools, the output is not truly original creations, but rather complex interpretations of user written prompts and the synthetization of the various datasets the programs were trained on. For functional purposes, the best of these tools have already advanced to a point where the output can perform at least adequately. Potential challenges arise when they move from performing functional tasks to mediating communication between humans.

The example of AI art is a helpful illustration of this challenge. Two primary criticisms of AI art have emerged in recent years. The first is that AI is exploitative of human creators both by ‘stealing’ their work as training data and by potentially eliminating future opportunities by replacing human creators with cheaper AI tools (Flick & Worrall, 2022). The second is AI in its current machine learning-driven form creates works which are syntheses of past works instead of truly original creations, and that because of this nature, they are inherently less impactful on viewers (Liu, 2023) (Millet, et al., 2023). While much of the lukewarm reception of AI generated art stems from tangible deficiencies and limitations, audiences also appear to have negative biases towards art they believe to be artificially generated, regardless of the actual content. Studies using music show that individuals rate compositions lower when the only manipulation is being told the same piece was written by an AI instead of a human (Moura & Maw, 2021) (Shank, et al., 2023). Such distaste becomes even more significant in an environment where consumers are primed to expect AI generated content regularly. Consumer suspicions of AI involvement may be enough to shift levels of engagement. The critique related to the ethics of AI generated content is certainly an important debate with many complex ethical, technological, and legal dimensions

which require addressing by their respective fields, but the difficulties around human receptiveness towards artificially generated content are perhaps more pressing for the usefulness of artificially generated content in marketing contexts.

A different compelling example can be seen in the polarized responses to a Twitter/X post containing an AI modification of a painting originally by visual artist Keith Haring. In an initial post from June 16, 2023, user `b r o o k e *:·° ✧` asked others to share works of art that emotionally moved them, using an intentionally unfinished painting of Haring's as an example. The work shared in this initial post is an abstract painting in Haring's signature style, covering only a quarter of the canvas, its intentionally incomplete state meant to communicate the artist's recognition that his diagnosis of AIDS would similarly leave his career incomplete (Kaplan, 1998). The painting, along with much of Haring's other work which similarly responds to the personal and societal impacts of the AIDS epidemic, have become symbolically significant representations of the destruction and death the disease inflicted, especially on LGBTQ communities (Huber, 2018) (Smith, 2019). In a December 31, 2023 post, user Donnel quoted the original post with a caption of "The story behind this painting is so sad! Now using AI we can complete what he couldn't finish!" and included an AI rendition of what a completed version of the unfinished painting could have looked like. Within 48 hours, the post containing the AI 'completed' version went viral across Twitter/X, gathering 30,000 likes and 15,000 quotes + comments, the overwhelming majority of which were negative and included hundreds wishing injury or death on the poster for digitally defacing Haring's unfinished painting. Whether the post represents a sincere attempt on the user's part to engage with the original piece of art, an example of internet troll mockery, a commentary on AI art, or any other motive (or lack thereof) is not entirely certain.

Regardless of initial inspiration, the post illustrates both the unstructured and hostile responses which can be prompted by AI content and exemplifies an amplification of Roland Barthes' critique of the absolute supremacy of authorial intent. In the essay "The Death of the Author" (1967/1998), Barthes argues that interpretation of artistic works is a collaboration between the text and the reader, and that attempting to filter the interpretation through the external identity of the author is sloppy and limiting. The author still contributes to the interpretation of a work, but only via the elements directly present in a text or other artistic work. In the case of AI generated art, the ability to imprint meaning and guide viewers' interpretations through formal elements is abstracted away from the human who initiated the process. To Barthes point, even if the poster of the AI-completed painting explicitly stated that his purpose was meant to honor Haring and reflect on a lost legacy, many viewers would still react with strong negativity. But the inability to parse intention from either the work itself or the context in which it is presented highlights the difficulties of using AI content to communicate in digital spaces. As a platform, X/Twitter (like the vast majority of social media sites) is just as easily associated with mockery as sincere engagement. This contrasts with past examples of remixed or reused art, such as that frequently displayed in the Dada movement early in the 20th century. Although most associated with mocking both specific works and artistic trends as protest and philosophical critique, Dada also engaged in more sincere forms of artistic creation within the same forms (Richter, 1997) (Hage, 2011). Despite these varying motives and intentions, the specific contexts and content used allowed for precisely calibrated works that had some resistance to misinterpretation or denied easy interpretation intentionally instead of by accident.

II. The Communicatory Function of Content

All pieces of marketing content can be considered as aesthetic objects in a similar sense to a piece of art. Both pieces of art and pieces of marketing content both ultimately serve to

communicate with their audience and to evoke some response, although the media, presentation, and intended response differ tremendously. Continuing the comparison, even small choices in materials and symbolism may radically drive the meaning and effectiveness of both, with the importance and intention of these choices often dictated by very specific cultural subtexts. In the realm of art, this manifests in examples like Dutch still life paintings from the 1600s which visually consist of rich luxurious spreads of food, but also build a symbolic language referencing religious and economic realities of the painters' context (Honig, 1998). In the realm of marketing, a similar example can be given from Denmark's Jolly Cola which crafted a series of advertisements directly invoking the fairy tales of Hans Christian Anderson in their efforts to push back against the increasing market share of Coca-Cola (Askegaard & Csaba, 2000). In both cases, the surface messages translate well enough across temporal and cultural lines that a modern viewer can appreciate the work to a degree without even knowing that there is deeper context and messaging at work. But to their original Dutch and Danish audiences, the painting and the commercial instantly communicate the tension of worldly wealth and spiritual decadence in a staunchly Calvinistic society and the value proposition of a beverage that not only tastes better than competitors but also has a deeply local connection respectively. This is a type of subtext and symbolic language very difficult for artificial content to mimic accurately enough to be beneficial.

A conservator specializing in artistic works created with nontraditional materials, Christian Scheidemann (2005) finds that often the physical details of pieces of art reveal a "secret language" through which the art attempts to communicate, such as seemingly incidental smudges and fingerprints on an otherwise pristine work representing a struggle to escape. This idea of a "secret language" communicated through seemingly minor or incidental formal details

highlights one of the limitations for artificially generated objects. Modern tools through machine learning and proper input could likely devise an object with nearly identical aesthetic parameters, merely lacking the fingerprints and smudges. But by losing this minute detail, a significant part of the emotion and meaning of the entire work is lost. This is not a baseless concern. The theoretical approach to communication utilized in almost every digital system is based on information theory, while leading attempts at modeling human communication – namely semiotics – suggest humans communicate in a radically different manner.

III. Theories of Communication

While numerous theories of communication exist in both general and domain specific forms, their goal usually consists of explaining how information and meaning is transferred between agents. Working from a descriptive perspective, H. P. Grice (1975) attempted to construct a set of simple maxims under the categories of *Quantity*, *Quality*, *Relation*, and *Manner* (following the categories laid out in Kant's *Critique of Pure Reason*), which provide a loose set of rules which outline how a participant in a conversation can make their contributions meaningful and purposeful. These rules, reproduced in Table 1, provide a helpful heuristic to evaluate whether the transmission of information is both useful and meaningful.

Table 14 - Grice's Maxims

Quantity	"Make your contribution as informative as is required (for the current purposes of the exchange)." "Do not make your contribution more informative than is required."
Quality	"Do not say what you believe to be false." "Do not say that for which you lack adequate evidence."
Relation	"Be relevant."
Manner	"Avoid obscurity of expression." "Avoid ambiguity" "Be brief" "Be orderly"

Information theory and semiotics track similar themes of communications – both are concerned with how information is encoded, transmitted, and decoded in a way that conveys meaning – but have diverged significantly in their applications. Grice's maxims can be applied through either model to evaluate the effectiveness of communication. Information theory, heavily informed by the work of Claude Shannon (1948) (Shannon & Weaver, 1949), takes a probabilistic approach to information based on decay and noise that make it a perfect fit for technical applications and concerns from signal processing to data architecture to translating human instructions into binary instructions for computers (Young, 1971). It is built upon statistical prediction of what is syntactically likely, an approach directly reflected by next word prediction algorithms and carried over into the LLM-driven generative AI platforms of today (Adger, 2019). Information theory requires the setting of rules by which information can be

encoded and decoded to maximize the retention of meaning and minimize the risk that the meaning is lost due to noise, decay, or other interruption. Because the focus of information theory is overcoming the technical barriers to communication, it requires the compression of information to its most objective form. Shannon (1948) remarks in the introduction of his foundational work on information theory that “semantic aspects of communication are irrelevant to the engineering problem [of transmitting information accurately]”.

The foundation of current AI applications is natural language processing (NLP), both as the interface through which users pass instructions to the algorithm about their desired output, and as the response produced either as direct text in the case of chatbots or the visual interpretation and representation of image generators. The discussion of language and linguistic meaning is vital to understanding and applying NLP-powered tools properly. Text-based interfaces through which users can write unstructured requests to the program are among the most advanced modes of human-computer interaction (HCI) currently available. Like most user interfaces (UI), the interpretation and processing of the written commands follows the theoretical approach of information theory.

The application of information theory to language requires confronting the apparent fact that languages have massive amounts of possible rules (or perhaps even a seemingly infinite number of rules (Chomsky, 1957)), and that for a machine to meaningfully process natural language, a restricted set of grammatical rules must be imposed (Pierce, 1961). Early attempts at creating algorithms which could understand language required coding of potential grammatical structures by hand. While these approaches, such as SHRDLU – which allowed a user to interact with the program using natural language commands and respond appropriately in a way very similar to modern chatbots – were very robust at accomplishing a limited set of tasks, the

requirement of manual coding greatly limited their scalability (Adger, 2019). Of course, as the processing power and memory capacity of computers exponentially exploded from this early theorizing, the number of rules which can be given to and interpreted by a computer have reached a point where machines can typically parse language accurately and even respond conversationally using complex grammar. Aided by machine learning to train models on the rules emerging from large quantities of documents created by human authors, even the most imperceptible formal rules of language can be deduced by the leading algorithms – particularly following the introduction of groundbreaking ‘transformer’ models (Vaswani, et al., 2017). Technological limitations towards natural language interpretation and response have radically declined and will presumably continue to advance at stunning rates. However, philosophical limitations of information theory may pose an under addressed difficulty for specific uses of artificially generated content, specifically for the purpose of this paper – marketing.

Semiotics, at least the tradition resulting from the work of Charles Peirce (Liszka, 1996), suggests that the transmission of meaning involves three components: the object, the sign (or representamen) which represents or ‘stands for’ the object, and the interpretant which is the impression formed by the sign (Hoopes, 1991). Additionally, semiotics can be described as the “relation between relations” captured by the distance between the sign-object relationship and the interpretant-object relationship (Kockelman, 2013). Because of these relationships, semiotics strongly suggests that the communication of meaning is inseparable from the context in which it occurs.

Without taking a full detour into debates within the philosophy of language, it is worth noting that the information models of semiotics and information theory mirror both classic and contemporary debates fermenting between philosophers of language. Even elementary linguistic

phenomena like metaphors distort a ‘true’ representation of the world (Ayer, 1936). This isn’t to argue that one theory is inferior to the other – they address different concerns under different circumstances. One of Shannon’s collaborators described communication as having three problems: the technical transmission of accurate data, semantic meaning and truth, and the influence which can be exerted on human behavior (Weaver, 1949) (Floridi, 2009). The field of information theory as founded by Shannon focuses primarily on the first problem, while semiotics attempts to understand the second and third. The question which needs to be addressed is whether a system fundamentally constructed on the principles of information theory is sufficient to address the needs of marketing communication.

Perhaps the most significant distinction between semiotics and information theory for the purposes of this paper lies not in their explicit modelling of communications – both of which can easily contain the three-stage conception of marketing communications and internally conform to all of Grice’s maxims – but in the differences each makes in assumptions about the intent and actions of the communication receiver. Information theory presumes that both the sender and the receiver share the belief and understanding that what constitutes the meaning of the transmission is only the objective, factual content of the message. In contrast, Semiotics is structurally agnostic about whether the receiver (or even the sender) views the meaning as only deriving from the literal content. Given that since the earliest days of the field most semiotic works have focused on understanding how context affects both the direct meaning of messages and their interpretation, or that one famous definition of a semiotic sign is anything “which can be used in order to tell a lie” (Eco, 1976, p. 7), the emphasis of semiotics focuses on meaning derived from additional sources. This contrast between the assumptions about how messages are interpreted under information theory and semiotics mirrors the two conflicting historical approaches to

interpretation described by Umberto Eco (1990). This more traditional battle of views on how to interpret texts fundamentally rests on the idea of whether meaning derives solely from authorial intent or whether meanings can be determined by other sources. While philosophically resolving this question in other fields remains hotly contested, marketing can approach the question pragmatically. Ultimately all that matters is ‘how do consumers interpret marketing messages’ in practice. The clear answer is that consumers interpret marketing messages in a myriad of unintended ways.

IV. The Limitations of AI to Communicate

The function of any marketing communication is to deliver information from a sender (the firm) to a receiver (the customer). Linguistic communication between agents rests on assumptions and presuppositions about the form, context, genre, and media (Segers, 1976) (Tyler, 1978) – a reader of a newspaper, novel, and social media post would interpret the exact same sentences differently in their respective forms. The concept of a semiotic sphere or ‘semiosphere’ originated by the Russian semiotician Juri Lotman may be helpful in describing the extent to which marketing messages follow the semiotic model. Lotman’s semiosphere is an attempt to capture the phenomena where the meaning of a text is frequently both explicitly generated by preceding texts (in something akin to genealogical fashion) and subtly shaped by other texts or meanings only related through contextual proximity (Lotman, 1990) (Semenenko, 2012).

In an essay for *The New York Times* (2023), linguist Noam Chomsky argues that current ML driven AI has several critical limitations. While Chomsky focuses primarily on shortcomings limiting such AI tools from achieving true independent intelligence, he also highlights the conceptual and linguistic inability of such models to generalize beyond their training. Despite the

massive amounts of training data provided to the most advanced models, they will never be able to regularly accomplish any task outside the training scope or provide any truly creative information. This limitation is also experimentally demonstrated by Google DeepMind, finding that advanced LLMs have remarkable capacity for “in-context learning” – or correctly performing the tasks they were trained for even when given previously unseen input – but fail at even simple extrapolation tasks outside their training (Yadlowsky, et al., 2023).

It is important to note that while both semiotics and information theory attempt to describe a general theory of how meaning is transmitted using different structures and emphases, they are not wholly exclusionary. As both fields have evolved in both theory and application, information theory remains critical for building the technological architecture for information transmission, while semiotics is commonly used as a tool for analyzing how the execution of communication. Semiotics can easily be used to analyze systems built upon information theory and becomes especially valuable to examine whether the systems are accurately communicating with – or on behalf of – their human users. The most direct application of semiotics to digital tools comes in the realms of human-computer interaction (HCI) and user experience (UX) (Brejcha, 2015). The layout of interfaces, method of interaction, as well as discrete objects in the form of buttons or embedded language all constitute semiotic signs that mediate the transmission of meaning between software developers and users. In such cases, information theory and semiotics work in harmony to ensure that the integrity of meaning is maintained as it is stored or transmitted (information theory), and that end users can interpret and understand the meaning as intended.

Complication is introduced once AI – or any procedurally generated content – becomes a core source of either creating or presenting meaningful information. In the case of most current

AI tools, both occur. A user enters a prompt, and the tool assembles at least a semi-original response – the exact information or meaning being returned to the user has not been directly vetted by a human agent. Factual errors may occur if the information is incorrect due to either a faulty source or a logical slip in the program. Examples are easy to find or provoke in even current tools, from simple arithmetic or spelling errors to fabricating citations for non-existent publications (Walters & Esther, 2023). Two common terms frequently used for such errors are phantom responses or hallucinations. While new releases or even updates to existing models can reduce such errors, eliminating them entirely from programs designed to function under extremely broad contexts remains elusive (Dziri, et al., 2022). Such errors already affect real-world business contexts, perhaps most notably to date via a February 2024 ruling by a Canadian tribunal that Air Canada was liable for an incorrect policy hallucinated by its website chatbot (Melnick, 2024).

There are two primary theoretical hurdles facing current AI as a direct communication partner with humans as AI generated content does not mirror the traditional semiotic model of how meaning is constructed. The relationality between the three components in the semiotic model implies that the meaning conveyed by any sign is constructed from at least three directions. First, there is the independent or literal meaning of the sign, such as the dictionary definition of a word. Second, there is how the sign is interpreted by the observer. Finally, there is the meaning intended by the source. Additionally, external contexts may alter or amplify any of these three forces. Since current AI models are neither capable of general intelligence nor reliably functioning beyond their training scope, there is no coherent sense in which current AI models can intend a non-textual meaning for any sign they output (Jørgensen, 1993). The first

hurdle is the risk of miscommunicating meaning. The second hurdle is that even if meaning is accurately communicated, it lacks the required richness in certain contexts.

For the first hurdle, there are two ways AI could present problems by miscommunicating meaning to human receivers. First, the model may inadvertently transfer unintended meanings present in its training set into its output. While the most common instance of such a failure would be mild ambiguity or confusion, more sinister results include outputting harmful or inflammatory material due to missing or bypassed guardrails, as in the case of Microsoft's ill-fated Tay chatbot (Neff & Nagy, 2016). Although challenging to eliminate entirely, this variety of failures can be minimized by a combination of training data and programmatic safeguards and remains an area of continual focus and improvement among developers. The second way the hurdle of non-existent intention could limit effective communication is simply that humans are not used to the absence of this factor in the production of meaning. Since humans process meaning conveyed in other digital environments without insurmountable limitations (Nadin, 1988) (Brejcha, 2015), it is unlikely that this hurdle alone dooms interpretation of meaning from AI sources.

The second, more significant hurdle for AI to overcome is that although meaning is communicated accurately, it lacks some substance present in human communication. From a semiotic perspective, objects are endowed with meaning by their creators (Kühler & Carroll, 2021). Although this results in primary agency which can be attributed back to the creator of the object, once placed into the world, objects function with secondary agency through which they can communicate independently of their creator (Gell, 1998). Using AI to create marketing messages complicates this process, as the AI – rather than the firm – takes on the role of the primary agent which is represented by the secondary agency of the AI generated content. From a semiotics perspective, what is represented by a marketing communication created via AI is not

the product or the firm as it exists in the world, but the model of that product or firm which has been constructed from the training data and algorithms which constitute the AI. This is not to say that AI generated marketing communications are unintelligible in either theory or practice. The model of primary-creator agency and secondary-object agency proposed by Alfred Gell (1998) (Davis, 2007) extends to recognize that there almost certainly exists external agencies acting on the creator, such as the subject of a portrait or the patron who commissioned it. Similarly, a marketing message created primarily by AI would be impacted by the external agency of a human operator entering prompts or the programmer who configured a chatbot to respond to customer complaints.

Marketers must be especially cognizant of the implications these limitations have not only for the effectiveness and appeal of specific communications, but how they may impact long-term marketing and branding goals. While models improve consistently, including in their ability to provide output that doesn't follow overly rigid formulas, there is still significant risk that the style of content generated by AI tools might not match the organic brand voice. This can be easily seen in the realm of social media marketing as demonstrated below in the Twitter case study, where posts generated using minimal prompt framing include more rigid and formal language than social media content written by humans. Over time, such departures from an official brand voice may result in reduced engagement, as customers recognize that there is lower involvement from human brand representatives.

While this theorizing may point out potential underexplored dangers for blindly deploying customer facing AI solutions, it is not possible to suggest that the solution is to reject all AI applications from communication tasks. The potential for financial and efficiency gains are too great to ignore, and the number of AI tools publicly deployed shows that even without

optimization firms find them valuable. Possible routes to integrating contemporary AI successfully include sophisticated prompt engineering to ensure that generated content matches the organic brand voice, possibly by training LLM extensions on past social media posts, or by employing hybrid human-AI methods, where AI is used as a brainstorming partner rather than authorial replacement.

The next step which must be taken is to pinpoint the weaknesses in AI communication, so that they can be addressed by either corporate users via prompt engineering or potentially even by primary developers.

Many important factors can affect the performance of a brand's social media presence. Engagement, or customers interacting with a brand's posts via liking, commenting, or other actions, remains the central focus for many firms (Liadeli, et al., 2023). Driving this engagement can follow a number of tactics or interventions based around strategic timing and formatting (Borah, et al., 2020). Branded social media content is most effective when strategically linked to other marketing channels (Kumar, et al., 2016) (Meire, et al., 2019). Additionally, consumer perceptions of authenticity significantly affect their responses to branded messages (Nunes, et al., 2021).

V. Methodology:

This paper has two methodological components. The first study is a survey component which explores consumer perceptions about AI generated marketing messages in the contexts of customer support and general social media marketing. Both Trust in Algorithms scales are presented twice, each time accompanied by a brief prompting of the two scenarios. A total of 961 responses were collected via Qualtrics survey and Amazon MTurk recruitment. Incorrectly answered the check questions and responses which were submitted in under 90 seconds were

filtered out, with 841 usable responses remain. Of the respondents, 70% identified as male and 30% as female. The age of the respondents is 5% 18-24, 70% 25-34, 18% 35-44, 4% 45-54, and 2% 55+.

The second is an analysis of Twitter⁷ posts from brands in 2019⁸. The dataset includes all original posts from the brands and consumer replies to those posts. The dataset collected for this project will contain the Twitter interactions for 241 brands during 2019. Brands were selected initially using the 2019 *Forbes* 100 list. To ensure sufficiently diverse industry representation, the list was completed by adding additional brands (again selected by highest follower count) so that each NAICS sector represented by the initial list included a minimum of 10 subjects. All English language tweets from the brand accounts, tweets tagging the brand accounts, and replies to tweets from the brand accounts are collected using the Academic Track Twitter API. The final dataset will consist of over 100,000 tweets from brands, and over 2 million tweets responding to these 241 brands. A stylistic analysis is conducted via a Bayesian classifier constructed on grammatical and linguistic features. These stylistic features will be measured against engagement statistics (likes, retweets, comments) to find what characterizes high-engagement posts. A dataset of AI posts will be generated to compare how frequently high-engagement stylistic features naturally appear in artificially generated content.

⁷ In 2023 Twitter was renamed to X. For the purposes of this paper, the platform will be referred to as Twitter and individual posts as tweets.

⁸ 2019 was selected as the year for analysis as the last fully pre-COVID year, with changes following Elon Musk's acquisition of the platform limiting available data past 2022.

VI. Study One: MTurk Survey

Scales:

Trust in Algorithms (Castelo, Noah, Maarten W. Bos, and Donald R. Lehmann (2019), “Task - Dependent Algorithm Aversion,” *Journal of Marketing Research*, 56 (5), 809 – 825.)

1. I can see the benefits in algorithms that can perform this kind of task better than humans.
2. Algorithms that can perform this kind of task could be useful.
3. I believe this kind of algorithm can perform well.

Trust in Algorithms (Castelo, Noah, Maarten W. Bos, and Donald R. Lehmann (2019), “Task - Dependent Algorithm Aversion,” *Journal of Marketing Research* , 56 (5), 809 – 825.)

1. Algorithms that can perform this kind of task better than humans make me uncomfortable.
2. Algorithms that can perform this kind of task go against what I believe computers should be used for.
3. Algorithms that can perform this kind of task are unsettling.

Attitudes. subscales (The Media and Technology Usage and Attitudes Scale: An empirical investigation; L.D. Rosen,* K. Whaling, L.M. Carrier, N.A. Cheever, and J. Rokkum)

These subscales includes 16 items, which comprise four subscales: Positive Attitudes Toward Technology (6 items), Anxiety About Being Without Technology or Dependence on Technology (3 items), Negative Attitudes Toward Technology (3 items) and Preference for Task Switching (4 items)

5-point Likert scale for all items (with scoring in parentheses)

- Strongly agree (5)

- Agree (4)
- Neither agree nor disagree (3)
- Disagree (2)
- Strongly disagree (1)

1. (Positive attitudes) I feel it is important to be able to find any information whenever I want online.
2. (Positive attitudes) I feel it is important to be able to access the Internet any time I want.
3. (Positive attitudes) I think it is important to keep up with the latest trends in technology.
4. (Anxiety/dependence) I get anxious when I don't have my cell phone.
5. (Anxiety/dependence) I get anxious when I don't have the Internet available to me.
6. (Anxiety/dependence) I am dependent on my technology.
7. (Positive attitudes) Technology will provide solutions to many of our problems.
8. (Positive attitudes) With technology anything is possible.
9. (Positive attitudes) I feel that I get more accomplished because of technology.
10. (Negative attitudes) New technology makes people waste too much time.
11. (Negative attitudes) New technology makes life more complicated.
12. (Negative attitudes) New technology makes people more isolated.
13. (Preference for task switching) I prefer to work on several projects in a day, rather than completing one project and then switching to another.
14. (Preference for task switching) When doing a number of assignments, I like to switch back and forth between them rather than do one at a time.

15. (Preference for task switching) I like to finish one task completely before focusing on anything else.⁹

16. (Preference for task switching) When I have a task to complete, I like to break it up by switching to other tasks intermittently.

Results:

Survey:

Trust in Algorithms:

When asked about their trust in algorithms to accomplish either customer service or social media tasks, respondents indicated both a strong belief that algorithms can accomplish these tasks successfully and that their ability to do so is unsettling in both scenarios. These positions, in many contexts perhaps contradictory, make sense given the rapid explosion of generative AI technology over the past few years, where people have seen their value demonstrated in increasing numbers of practical settings and heard endless hype and warnings through various media cycles about their future capabilities.

Table 15 - Trust in Algorithms

	N	Minimum	Maximum	Mean	Std. Deviation
TrustInAlgCSPosAv	841	1.67	5.00	4.20	.54
TrustInAlgCSNegAvg	841	1.00	5.00	3.93	.79
TrustInAlgSMPstAvg	841	1.33	5.00	4.17	.59
TrustInAlgSMNegAvg	841	1.00	5.00	3.92	.83
Valid N (listwise)	841				

Attitudes:

Similarly, respondents affirmed all four categories of attitudes towards technology. Respondents felt strongly that advances in technology have positive or productive impacts, but

⁹ Reverse coded

also that the technology which they use comes with associated anxiety and dependence. Also similarly to the questions about the use of AI in various tasks, respondents affirm the potential for negative social impacts from new technology, although with this category showing the highest variance in responses. Respondents also slightly favor performing their work in a manner that takes advantage of task-switching.

Table 16 - Attitudes

	N	Minimum	Maximum	Mean	Std. Deviation
AttitudesPosAvg	841	1.83	5.00	4.20	.51
AttitudesAnxAvg	841	1.33	5.00	4.07	.66
AttitudesNegAvg	841	1.00	5.00	3.97	.83
AttitudesTskSwAvg	841	1.00	5.00	3.48	.51
Valid N (listwise)	841				

While the information gathered from this survey is simple and somewhat replicates past explorations, its inclusion is important to serve as a benchmark for current perceptions of technology. As with all new technologies on their way to rapid widespread adoption, there is currently tension between perceptions of its usefulness and concerns about its appropriateness and potential for negative impact. Particularly from a marketing standpoint, this information points towards the difficulty facing firms as they choose if – or how – to deploy customer facing AI tools. Already, consumers have relatively high confidence in the ability of these tools to accomplish public facing tasks. However, there may be negative reactions towards the appropriateness in using such tools. Specific brands will have to work to understand the exact ways in which their audiences will react to the use of such tools.

VII. Study Two: Twitter Case Study

Comparing the exact content of sentences (or corpuses of sentences) is a straightforward NLP task. Lexical comparisons, such as Jaccard similarity or cosine similarity, can easily measure the exact differences between word sets. Even comparisons slightly more complex,

comparing similarities in meaning, can be measured without much more preparation through semantic comparisons of word embeddings or sentence embeddings. Because the vocabulary deployed by each brand will be slightly different due to their respective offerings, the corpuses must be standardized by removing terms which are only used by a small subset of tweets.

While evaluating the lexical and semantic dimensions of human vs AI writing are certainly part of the comparisons which must be made here, they do not cover the entire spectrum of grammatical features which must be explored. A third approach, evaluating differences in structure can also be undertaken.

The foundation of this third step is related to the classic grammatical exercise of sentence diagramming. The differences in the structure of sentences can be measured computationally by comparing their diagrams programmatically by using the same lexical and semantic comparisons as above but applied to the symbolic representation of sentence structure rather than plain English. This can be accomplished using either a simple parts-of-speech tagging approach, or a more complex one using not only independent items, but also their sentence-level grammatical dependencies. For the purpose of combining multiple layers of analysis, the parts-of-speech tagging approach has strong advantages, as most NLP parsing tools used to generate vocabularies can simultaneously generate parts-of-speech tags, allowing for the exact same data to be examined at each level. For short pieces of text like tweets, this approach faces fewer tradeoffs than longer bodies of text, where varied sentence structure has more significance.

Once these extractions are complete, a naïve Bayesian classifier can be constructed from the three levels of lexical, semantic, and structural comparisons. This classifier will first be validated by using a set of testing data not included in the initial training data to ensure that it can correctly identify AI vs human written posts. After this is confirmed, the relative weights and

breakpoints in the classifier can be examined to indicate which features are indicative of each source of authorship.

Data Collection:

The human-written dataset collected for this project contains Twitter posts from 241 brands during 2019. All English language tweets from the brand accounts were collected using the Academic Track Twitter API. Initial brands were selected using the 2019 Forbes 100 list. This list was increased by selecting competitors in the same industries with the highest Twitter follower counts. The final dataset results in 182,572 tweets from brands.

A corresponding dataset of AI written posts was generated using ChatGPT-4o, by prompting it to generate social media advertising posts in the format of tweets for 11 selected brands¹⁰. Limiting the human-written dataset to just posts from these brands leaves a human-written dataset of 41,587 tweets. These brands were selected as brands with both large samples of human-written posts and with significant consumer engagement, to ensure that ChatGPT-4o would have enough information to accurately create representative content. Since this study is not concerned with the specific promotional aims of the social media posts, little additional guidance was provided. ChatGPT was simply instructed to “write unique, non-repeating social media posts promoting [each given brand]”. Multiple versions of ChatGPT were tested, all of which struggled to generate large batches of example tweets without getting stuck in a loop and repeating the same suggested post. This was overcome by prompting ChatGPT-4o for batches of 25 tweets at a time and appending the new tweets to an existing CSV. The final dataset of AI-written posts is 500 example tweets from the 11 selected brands. The dataset for AI-written posts is noticeably smaller than the Twitter dataset due to the repetitive nature of ChatGPT’s generated

¹⁰ Chick-fil-A, Nike, Taco Bell, Walmart, McDonalds, Starbucks, Disney, Apple, Google, ESPN

messages, which rapidly begin to repeat syntactically and semantically with minimal prompt structuring. While more involved prompting can create more unique – and likely stronger – content, to get at the most basic grammatical biases of ChatGPT, the LLM is provided as little guidance as possible. This represents findings at the minimal level of human involvement, but further research using more specialized vocabularies, brand voices, and human guidance would be beneficial future extensions into studying the optimal level of human involvement.

Classifier:

The first level of the classifier is constructed using a vocabulary classification model using the Keras framework with UDPipe parsing and annotation. The specific implementation for a tweet classifier follows the approach demonstrated by Jindra Lacko (2019) for classifying tweets from two different accounts with ~90% accuracy. Running the same parameters on the AI vs human datasets achieves 95.45% accuracy, correctly identifying all AI posts, while misattributing 8.7% of human authored posts to AI authorship. A vocabulary-based approach can more precisely identify the differences between AI and human authorship than between two different human authors. The second level uses an almost identical approach, again using Keras and UDPipe, but instead of using the vocabulary derived from the tweets, it uses their parts of speech as tagged by the UDPipe annotation. The same Keras model as before correctly classifies 87.88% of tweets according to their parts-of-speech, misidentifying 2% of AI-authored tweets and 21.35% of human-authored tweets.

Analysis:

Both levels of analysis are extremely accurate at identifying posts with AI authorship, but slightly worse at identifying those with human authorship. If human audiences are similarly perceptive to these nuances, this indicates that brands using undisclosed AI tools for generating

their social media content may come off as less human. This limitation tracks with the theoretical limitations of AI to communicate, but also has further implications for how effective at engaging their audiences AI tools may be at this point in time. Research around constructs such as brand personality (Aaker, 1997), as well as general findings around perceptions of brand “aliveness” (Yoon, et al., 2006), indicate strong benefits for brands when consumers perceive them as more animate. The linguistic and biological concept of animacy (Cherry, 1992) suggests that this isn’t merely a binary between human and non-human, or alive and not alive, but a continuous hierarchy stretching from incorporeal concepts to inanimate objects to plants to animals to humans. In such a model, the shift in perception of brands from human-mediated to machine-mediated could have dramatic impacts on how consumers perceptually engage with branded communications and promotions.

Some markers of AI authorship in the test data are readily apparent from observing the list of posts written by AI. Even with the most advanced generative AI tools varying their exact output, there are certain areas of stylistic rigidity. All of the posts in the AI generated sample use a brand’s name in every tweet. By extension, this leads to any subsequent referent pronouns being plural (we, us). This rigidity contrasts with human authorship, where many successful campaigns will take on a more personal style. While certainly many human authored brand posts do follow this format, it points towards the limitation of generative AI to engage in particularly creative social media advertising without additional prompt engineering.

Table 4 shows the percentage of the entire sample each part of speech represents by authorship. Several of these categories have large differences between authorship, some of which are expected, and others which were not. While both authorship sources use nouns as the most frequent part of speech, they represent almost 22% of the vocabulary of AI authored posts, and

only 17% of human authored posts. Similarly, AI posts have a significantly higher percentage of punctuation symbols used than those authored by humans. The difference in punctuation is expected, as AI-generated content tends to use a more formal style even when writing social media posts. A surprising difference is that human authored posts contain a higher frequency of proper noun usage, given that one of the notable aspects of the AI-generated sample is that every post contains the brand name. Even with this rigidity ensuring that each AI post includes at minimum one proper noun, the usage rate is over three percentage points higher among human authored posts. The final two categories with relatively high discrepancies in usage rate, numbers and symbols, are also easily explained. Since the AI generated posts contain generic appeals, they are unlikely to mention specific prices or dates, both of which are referenced numerically by human written posts. Similarly, ChatGPT-4o does not include any emojis or other non-ASCII characters in generated text unless specifically prompted.

Table 17 - Parts of Speech by Authorship

Author	<i>NOUN</i>	<i>PUNCT</i>	<i>VERB</i>	<i>ADP</i>	<i>PROPN</i>	<i>PRON</i>	<i>ADJ</i>	<i>DET</i>	<i>ADV</i>
ai	21.92%	17.08%	10.75%	9.89%	7.08%	7.39%	7.70%	6.17%	3.77%
human	16.99%	12.66%	10.27%	9.20%	10.27%	8.33%	6.62%	6.12%	4.12%

Author	<i>AUX</i>	<i>PART</i>	<i>CCONJ</i>	<i>NUM</i>	<i>SYM</i>	<i>SCONJ</i>	<i>X</i>	<i>INTJ</i>
ai	2.45%	2.53%	2.40%	0.16%	0.00%	0.36%	0.12%	0.23%
human	3.12%	2.64%	2.07%	3.39%	2.37%	0.74%	0.91%	0.18%

While current AI models use particular parts of speech more or less frequently than human authors, how this will affect engagement remains an open question which needs follow-up research. Looking at the 2019 Twitter data, presumably written almost entirely by human authors, no specific parts-of-speech usage correlates significantly with changes in engagement rates, as shown below in Table 5. The danger of using AI to communicate with customers isn't

that AI might use grammatical structures that readers respond negatively towards. Such a concern could be relatively easily addressed through modifying the instructions with which the AI is prompted. Instead the concern lies with particular stylistic, grammatical, or vocabulary choices which signal AI authorship to customers who view this form of technology negatively.

Table 18 - Correlations between Parts of Speech and Engagement

Part of Speech	Likes	Replies	Retweets
ADJ	-0.03345	-0.00715	-0.02678
ADP	-0.01538	-0.00245	-0.0118
ADV	-0.01597	-0.01432	-0.01656
AUX	-0.03015	0.000217	-0.02214
CCONJ	-0.00478	-0.01315	-0.00865
DET	0.005334	-0.0029	0.010478
INTJ	0.011139	0.010969	0.032164
NOUN	-0.01107	-0.00364	0.003754
NUM	-0.01515	-0.0106	-0.01641
PART	-0.01568	-0.00851	-0.00504
PRON	-0.02167	-0.00809	-0.01233
PROPN	-0.00588	-0.01096	-0.00871
PUNCT	0.016431	-0.00359	0.009201
SCONJ	-0.03753	0.005372	-0.03011
SYM	-0.06598	-0.0223	-0.04795
VERB	-0.05514	-0.00462	-0.03721
X	-0.08121	-0.02026	-0.05087

VII. Implications for Marketers

Simply avoiding the use of AI in marketing contexts, even among skeptical audiences, is unlikely to be a viable long-term solution. Marketers must understand how to deploy these tools in ways that complement their existing brands and consider the technological views of their audiences. The first, incorporating brand voice or other stylistic elements into AI driven campaigns can be relatively straightforward, especially with the assistance of the numerous API wrappers and other add-ons being produced for just such tasks (Santra, et al., 2025). Past marketing content can be fed in as additional training or filtering layers on top of existing

models, or careful prompt engineering can guide the output in more polished directions. The second category of marketing implications, those dealing with customer opinions and behaviors, remain more challenging to control. Marketers must carefully consider whether their specific audience would respond positively or negatively to the knowledge that the brand's marketing content was being shaped by AI. If negatively, rigorously avoiding common markers of AI authorship becomes the minimum. Pursuing co-creation, where AI is used to brainstorm ideas which are selected, tweaked, and refined by a human partner may be even more effective.

Conclusion

As major developments in AI – both technical advancements of models and understandings of practical use cases – currently occur on seemingly a monthly basis, research into how AI fits into the field of marketing necessarily takes a snapshot approach to capture currently relevant topics. While this paper captures what are – at time of writing – current limitations for AI to perfectly mimic written human communication, new models will continue to surpass these limitations on a regular basis. Likewise, consumer understandings and reactions to AI remain in flux, as consumers face a constantly evolving ecosystem of AI agents which present both radical advances and ongoing frustrations. Both studies provide valuable snapshots of current AI technology and opinion but also face potential limitations. While the MTurk survey captures current consumer sentiment about AI, there are potential limitations related to the recruitment process. MTurk respondents are likely not a perfect representation of consumer beliefs around technology, since there are at least some self-selection effects related to their choice to regularly use a technical platform. The second study faces limitations as well. Even the relatively informal style of Twitter experiences regular linguistic evolution, so the distinguishing factors between a particular generation of LLM content and a specific year of Twitter data is not eternally consistent as both continue to evolve.

Despite this restriction towards total generalizability, this paper seeks to make two contributions with current relevance to the topic of AI-empowered marketing. The first is simply to document the technical capabilities and consumer response at this particular moment to contextualize further developments in light of present limitations and popular concerns. The second is to demonstrate the conceptual power of both linguistic and survey tools which can continue to be used as models and understanding continues to advance. While the exact tools and methodology behind consumer-facing AI marketing tools will continue to constantly evolve, the theoretical and conceptual basis will continue to stabilize, from both a technological and consumer behavior perspective. The aim of this paper is to present the continuing points of relevancy and conflict to consumer marketers attempting to expand the use, understanding, and discourse around consumer facing artificial intelligence tools.

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