

Intel Inside: The Linguistic Properties of Effective Slogans

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How can marketers create slogans that consumers like and remember? We answer this question by analyzing how the lexical, semantic, and emotional properties of a slogan's individual words combine to influence slogan liking and slogan memory. Through a large correlational study with over 800 brand slogans, laboratory experiments, a biometric eye-tracking experiment, and a field study, we unearth the word properties that make slogans effective. We predict and find that linguistic properties that make a slogan easier to process (i.e., more fluent) result in slogans that are more likable but less memorable, whereas linguistic properties that reduce processing fluency result in slogans that are less likable but more memorable. Across our multi-method investigation, participants indicated a more favorable attitude toward slogans that are shorter, omit the brand name, and use words that are linguistically frequent, perceptually distinct, and abstract. In contrast, participants were more likely to remember slogans that are longer, include the brand name, and use words that are linguistically infrequent, concrete, and less perceptually distinct. We conclude by offering marketers practical advice into optimal word-choice strategies and delivering actionable guidance for creating slogans that are either likable or memorable.

Keywords: slogans; brands; language; memory; attitudes; eye-tracking; multi-method

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Editor: Andrew T. Stephen

Associate Editor: Sarah G. Moore

Advance Access publication May 15, 2023

Firms spend millions creating and communicating slogans, such as “The ultimate driving machine,” “Intel inside,” and “Just do it” (Edwards 2011). Slogans, together with a brand's name and logo, constitute one of the three key elements of brand identity (Kohli, Leuthesser, and Suri 2007). Brand names tend to be restricted to one or two words, and both brand names and logos rarely change. Slogans, conversely, typically include multiple words and can be updated as firms adapt and reestablish themselves. This makes slogans the most dynamic of the three elements of a brand's identity, and an invaluable tool for building a brand. Slogans contribute to a brand's architecture either by helping consumers remember the brand (i.e., increasing brand awareness) or by improving the brand's image (i.e., increasing brand attitude; Keller 1993, 2014). Marketing communications, including slogans, are more likely to boost brand attitudes when consumers have a more favorable attitude toward the communication (Mitchell and Olson 1981), and they are more likely to increase brand awareness when consumers remember the communication

(Keller 1987). Slogans, however, are distinct from other marketing communications (e.g., ad copy, social media posts, and website text) because slogans often stand alone, tend to be more concise, are more closely and consistently tied to the brand, and are repeated more frequently than other communications. Given this valuable slogan–brand link (Briggs and Janakiraman 2017; Dahlén and Rosengren 2005; Keller 1993), understanding how to craft likable and memorable slogans warrants the attention of academic researchers and practitioners alike.

How can firms write effective slogans? The literature largely offers holistic advice, recommending that slogans be concise (Kohli, Thomas, and Suri 2013), be creative (Dass et al. 2014), and clearly communicate a benefit (Dass et al. 2014). Trade journals suggest that slogans should “capture the soul of the brand” (Kiley 2004), “be skillfully and creatively worded” (Lamons 1997), and “keep the long-term view in mind” (Kohli et al. 2007). While this advice is sound, it also tends to be subjective and difficult to implement. The literature offers little or no actionable insight into the word choice of slogans. For example, it would not help BMW decide whether its slogan should be “The ultimate driving machine” or a synonymous alternative, such as “The peak driving machine” or “The preeminent driving machine.”

Which words should brands use in their slogans? Do the specific words even matter or do a slogan’s effects depend only on its holistic meaning? Depending on how you interpret the literature, it either has not attempted to answer this question or it has argued that the component words do not matter because consumers process the meaning of slogans holistically (Budiu and Anderson 2004). We take a closer look at the properties of the words in brand slogans. Holding the meaning of a slogan constant, we examine how the word properties of slogans shape their memorability and likability. Building on research in linguistics, which demonstrates that the lexical, semantic, and emotional properties of words influence both perception and memory (Adelman and Estes 2013; Cortese, Khanna, and Hacker 2010; Kensinger and Corkin 2003; Kuperman, et al. 2014), we examine how the component words in a slogan influence its effectiveness.

Across a multi-method investigation that includes a content analysis of 820 real brand slogans, a biometric eye-tracking study, lab experiments, and a field study, we identify five distinct linguistic variables that shape how consumers respond to a slogan: its length, whether it includes the brand name, and the extent to which the words are frequently used, perceptually distinct from other words, and concrete. Specifically, we find that consumers are more likely to have a favorable attitude toward, but are less likely to remember, slogans with words that are easier to read and encode (i.e., fluently processed). Thus, slogans that use fewer words, omit the brand name, and contain

words that are frequently used, perceptually distinct, and less concrete are more likable but less memorable.

Our research contributes to the literature by offering novel, practical advice and conceptual insight. First, we provide actionable guidance to help marketers bolster brand architecture by identifying five linguistic factors that influence whether consumers remember and like a slogan. We thereby supplement holistic recommendations (e.g., “be creative”) with specific advice about word-choice strategies.

Second, we contribute to the slogan literature by revealing a tradeoff between creating a likable and a memorable slogan. Specifically, we show that the linguistic factors that improve slogan attitudes tend to make slogans less memorable and vice versa. Brands thus need to word slogans differently depending on whether their primary objective is to increase attitudes or memory, and our research offers practical advice on how to do so. Prior research has explored factors that influence slogan memory (Kohli et al. 2007, 2013; Mantonakis 2012) and factors that influence slogan liking (Dass et al. 2014; Dimofte and Yalch 2007), but it has not identified the tradeoff between creating a memorable and likable slogan.

Third, we contribute to the slogan literature by integrating the scattered effects of individual word properties and consumers’ reactions to slogans under a shared conceptual umbrella with fluency as its shaft. While recent investigations have explored the effects of single word properties in marketing communications (Packard and Berger 2021), we account for the simultaneous effects of multiple word properties and their combined effect in shaping consumers’ attitudes toward and memory of slogans. By showing how fluency helps explain what had previously been treated as disparate effects, we create a parsimonious theory of how the words in slogans influence consumers’ attitudes and memory, the two pillars of brand equity (Keller 1993, 2014).

CONCEPTUAL BACKGROUND, VARIABLES, AND HYPOTHESES

Given the ubiquity and importance of slogans, we were surprised to find only a handful of research articles on the topic. Most of these articles investigate holistic characteristics of slogans, such as whether the slogan is assertive (Kronrod, Grinstein, and Wathieu 2012), creative (Dass et al. 2014), expresses strength and virtue (Dowling and Kabanoff 1996), has multiple meanings (Dimofte and Yalch 2007), and clearly communicates a benefit (Dass et al. 2014). Focusing on the aggregate properties of a slogan fits with research showing that people process language holistically; that is, the meaning of a sentence is more than the sum of its individual words (Budiu and Anderson, 2004). For example, readers interpret the word

“sack” differently when they read “he put the turnips in a sack” than when they read “he was tired and hit the sack.”

We explore the extent to which the properties of a slogan’s words matter over and above their meaning. Specifically, we extend the literature by showing that consumers’ attitude toward and memory of a slogan depend on the ease with which they can process the slogan’s words. Building on processing fluency research (Lee and Labroo 2004; Schwarz 2004), we further hypothesize that the extent to which consumers can fluently process a slogan should have opposite effects on their attitude toward and memory of the slogan.

Processing Fluency

Processing fluency refers to the ease with which information is perceived and understood (Schwarz 2004). For example, consumers experience more fluency when they hear a familiar song or read black font on a white background than when they hear a new song or read pink font on a peach background (Schwarz 2004).

When consumers process information fluently, they are more likely to believe that it is true (Kelley and Lindsay 1993; Reber and Schwarz 1999) and feel more confident in the judgments and decisions that they make (Alter and Oppenheimer 2009; Novemsky et al. 2007). Importantly, they also tend to form a more positive attitude toward it (Alter and Oppenheimer 2009). For example, participants thought that circles were prettier when the color of the circle contrasted more with its background (Reber, Winkielman, and Schwarz 1998), evaluated a ketchup brand more favorably if they had seen a similar product beforehand (Lee and Labroo 2004), and were more likely to choose wine with a frog on the label if they had previously read the word “frog” (Labroo, Dhar, and Schwarz 2008). We thus predict that linguistic properties that make it easier for consumers to fluently process the words in a slogan should also improve their attitudes toward the slogan.

Information that is difficult to process (i.e., disfluent), in contrast, makes consumers attend more carefully to it (Alter et al. 2007; Diemand-Yauman, Oppenheimer, and Vaughan 2011). People are more likely to remember information when they process it more carefully (Bettman 1979; Craik and Tulving 1975), which suggests that consumers should be more likely to remember slogans with words that are more difficult to process (Cortese et al. 2010; Kohli et al. 2007). We are not aware of research testing the effect of fluency on memory for slogans; however, people tend to remember words better when they are printed in blurred, disfluent font than in clear, fluent font (Rosner, Davis, and Milliken 2015).

Although careful thought increases memory, it does not necessarily improve attitudes (Petty and Cacioppo 1979). In fact, when consumers are motivated and able to think

carefully about a persuasive communication, they are more likely to counter-argue it and less likely to be persuaded by peripheral cues (Campbell and Kirmani 2000; Insko, Turnbull, and Yandell 1974; Petty and Cacioppo 1979). In sum, research suggests that fluency can have opposite effects on attitude and memory. Thus, we predict that the linguistic properties that make slogans more difficult to process should make consumers like a slogan less but remember it better.

What types of words influence the ease with which consumers can process the slogan? Our next section discusses five factors that we hypothesize will make it easier for consumers to process the slogan: whether the slogan (a) is relatively short versus long, (b) uses words that consumers encounter more frequently versus less frequently, (c) uses words that have more versus less distinct spelling, (d) uses words that are less versus more concrete, and (e) omits versus includes the brand name. The literature has looked at the effects of a couple of these factors (Dass et al. 2014; Kohli et al. 2013); however, the effects of most of these factors on both attitude and memory have not been tested, and there have not been any studies that have tested their collective effect.

Linguistic Properties Related to Fluency

Slogan Length. Some slogans are short: “Invent” (Hewlett Packard). Others are long: “15 minutes can save you 15% or more on car insurance” (Geico). Should brands craft slogans with fewer words or with more words? Both practitioners (Ries 2010) and scholars (Dass et al. 2014) recommend keeping slogans brief. Processing a lot of information is cognitively taxing (Bettman, Luce, and Payne 1998). Relative to longer slogans, slogans with fewer words are easier to process and encode. Because consumers tend to like communications that are easier to process (Lee and Labroo 2004), we therefore predict that consumers will have a more favorable attitude toward slogans that use fewer words.

The literature similarly argues that shorter slogans are easier to recall (Kohli et al. 2013), but given the limited data, the relationship between slogan length and memorability remains an open empirical question. In contrast to Kohli et al.’s prediction, theory on processing fluency suggests that longer slogans may be easier to remember. Because they are more difficult to process, longer slogans should nudge consumers away from relatively effortless thinking toward more careful thought (Alter et al. 2007). This effortful processing should make consumers more likely to remember longer slogans than shorter slogans. We therefore predict the following.

H1: Slogans with more words will be (a) liked less but (b) remembered more than slogans with fewer words.

Word Frequency. Some slogans rely on frequently used words, such as “true” (Budweiser) and “it’s the real thing” (Coca-Cola). Others rely on more obscure words, such as “halitosis” (Listerine) and “fahrvergnügen” (Volkswagen). Consumers more easily process words and other stimuli that they encounter frequently (Alter and Oppenheimer 2009; Balota et al. 2004) and, consequently, tend to like them more (i.e., the mere exposure effect; Zajonc 1968). Conversely, consumers are more likely to attend to and remember stimuli that they encounter less frequently (Cortese et al. 2010; Lynch and Srull 1982). Thus, we predict that slogans that use words that consumers frequently encounter will be better liked but less remembered.

H2: Slogans with high-frequency words will be (a) liked more but (b) remembered less than slogans with low-frequency words.

Perceptual Distinctiveness. Some words look or sound like a lot of other words because they use a similar combination of letters or phonemes. “Can,” for example, is only one letter different from “cat,” “car,” “cab,” “con,” “man,” “ran,” “scan,” and many other words. Other words, such as “equinox,” use a more distinct combination of letters and sounds. Linguists measure the extent to which a word is perceptually distinct from other words by calculating the average number of single letter or phoneme changes needed to transform that word into other words (Yarkoni, Balota, and Yap 2008). For example, it takes fewer changes to transform “do” and “it” into new words than it does to transform “think” and “different.” Will slogans be easier to process when they include words that look or sound more similar to (e.g., Nike’s “just do it”) or distinct from (e.g., Apple’s “think different”) other words?

The answer to this question is not clear. On the one hand, words with more distinct letter combinations (e.g., “equinox”) tend to be less common and learned later than words that visually resemble other words (e.g., “can”; Kuperman, Stadhagen-Gonzalez, and Brysbaert 2012). On the other hand, when consumers read a word that closely resembles other words (e.g., “can”), similar words (e.g., “car” and “cat”) automatically come to mind, which would interfere with consumers’ ability to understand the focal word (Cortese et al. 2010) and therefore induce more effortful processing. The latter research suggests that distinguishing a perceptually similar word from its close orthographic neighbors requires attention, effort, and care. For example, in one study, participants were more likely to confuse perceptually similar, compared to distinct, brand names (Burt et al. 2017). Thus, after accounting for word frequency, consumers should process slogans with distinctive words more fluently than slogans with perceptually similar words (Balota et al. 2004). We therefore predict that slogans with distinct words will be more liked but less remembered than slogans with perceptually similar words.

H3: Slogans with perceptually distinct words will be (a) liked more but (b) remembered less than slogans with perceptually similar words.

Concreteness. Some slogans use words that are concrete: “Like a Rock” (Chevy). Others use words that are abstract: “Innovation that Excites” (Nissan). Concrete words refer to things that we can see, hear, taste, smell, and feel, such as a wool blanket, a five-star customer rating on Amazon.com, and a kiss on the cheek. Abstract words refer to general categories and intangible concepts, such as non-durable goods, satisfaction, and love (Warren et al. 2021). Should advertisers construct slogans that are concrete or abstract?

As with the other linguistic properties, the answer depends on whether advertisers hope to create a slogan that is likable or memorable. There is some evidence that consumers process abstract words more fluently than concrete words. For instance, people read abstract words faster than concrete words (Kousta et al. 2011). Moreover, positive emotion and abstract language are correlated: an analysis of more than 13,000 English words revealed that positive words tend to be more abstract than neutral words (Ponari, Norbury, and Vigliocco 2018). These studies suggest that consumers may process slogans that use abstract language more fluently and may thus have a more favorable attitude toward slogans with abstract words.

Consistent with the idea that concrete language is less fluent, concrete information is more likely to be remembered (Cortese et al. 2010; Fliessbach et al. 2006; Paivio 1991, 2013; Taylor and Thompson 1982). For example, after reading a passage, people were more likely to recall concrete (e.g., “rusty engine”) compared to abstract (e.g., “subtle fault”) phrases (Begg 1972). We thus predict that concrete words are more difficult to process and thus make slogans less likable but more memorable.

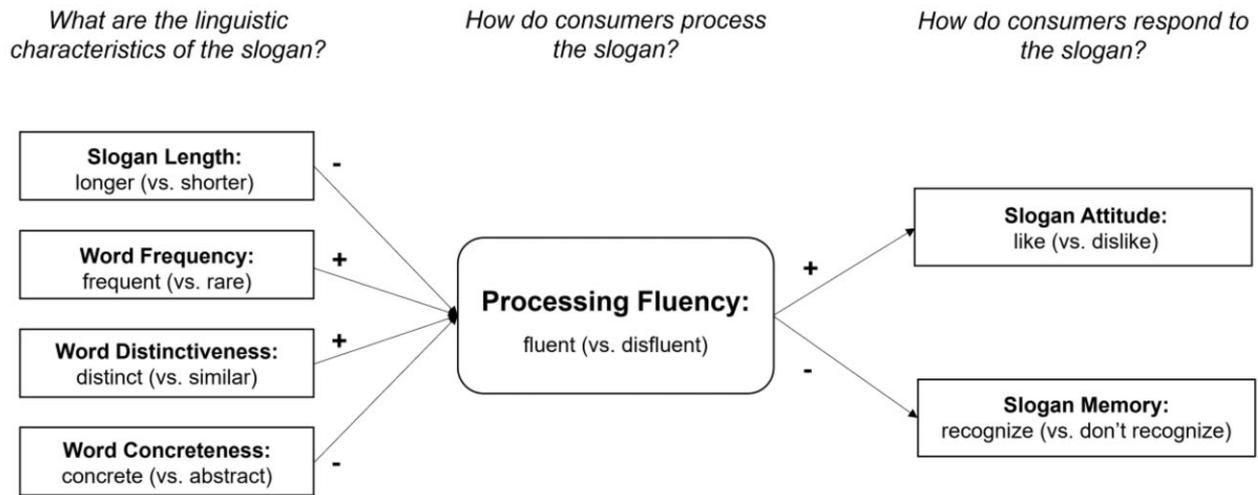
H4: Slogans with more concrete words will be (a) liked less but (b) remembered more than slogans with less concrete words.

Brand Name. One of the easier linguistic properties of a slogan for marketers to change is whether the slogan includes a brand name (e.g., “Every kiss begins with Kay”; Kay) or not (e.g., “A diamond is forever”; De Beers). It is unclear whether consumers will process slogans more fluently with or without brand names. Brand names often consist of unfamiliar words, surnames, acronyms, or even non-words (e.g., Intuit, Lululemon, IKEA, Spotify),¹ which might make them more difficult for consumers to process. At the same time, some brand names are comprised of relatively common words (e.g., Apple, Shell, Target, Tide),

1 Among Interbrand’s 2022 Best Global Brands list, the majority of the 100 listed brand names are not standard English dictionary words.

FIGURE 1

CONCEPTUAL MODEL



and repeated exposure to all brand names (even non-words) can increase their cognitive accessibility over time (e.g., Walmart, Google, Kleenex).

Brand names may also influence slogan attitudes through other mechanisms. For instance, brand names may activate consumers' persuasion knowledge (Laran, Dalton, and Andrade 2011; Tellis et al. 2019), which can induce resisting, and even counter-arguing, the slogan (Friestad and Wright 1994; Teixeira, Wedel, and Pieters 2010). Indeed, Tellis et al. (2019) find that placing brand names prominently in social media ads interferes with the effect of other persuasive ad characteristics and limits consumers' ability to fully process the ad, resulting in reduced sharing. Dass et al. (2014) similarly find that slogans that include the brand name are less likable. On the other hand, a conceptual article suggests that including the brand name may improve the slogan's memorability (Kohli et al. 2007). Given the ambivalent nature of the prior evidence, we do not predict how the presence of the brand name will influence slogan attitude or memory. Rather, we measure (study 1) and manipulate (studies 2, 4a, and 4b) it to explore the relationship between this property and slogan liking and memory. An overview of the conceptual model is provided in figure 1.

OVERVIEW OF STUDIES

We use a mix of methods to investigate the effect of linguistic properties on consumers' attitude toward and memory of slogans. We begin with a large correlational study using over 800 brand slogans (study 1). We then show how

firms can create either more likable or more memorable slogans by strategically using words that make the slogan more or less fluent (study 2). We use eye tracking to offer evidence that slogans with linguistically frequent, perceptually distinct, and abstract words are processed more fluently (study 3). We next conduct two laboratory experiments (studies 4a and 4b) that mimic the way that consumers view slogans outside the lab (i.e., bumper ads before YouTube videos). We conclude with a field study (study 5). Notably, we use real brand slogans in each study to demonstrate that simply tuning these linguistic variables can improve attitudes or memory of professionally designed slogans.

STUDY 1

We conducted a large-scale analysis of the linguistic properties that predict consumers' attitude toward and memory of real slogans. We aggregated a set of more than 800 slogans used by brands from a variety of industries. We first calculated the length of each slogan and the frequency of usage, distinctiveness, and concreteness of its words. We also coded whether the slogan included the brand name. We then measured the extent to which a sample of participants liked and remembered the slogans. Finally, we used the linguistic properties of the words to predict liking for and memory of the slogans.

Method

Participants. Participants were 594 undergraduates at a large U.S. university.

Stimuli. The stimulus set initially consisted of 830 unique slogans² obtained from the online repositories and databases of various slogan consultancy firms and websites (see [web appendix A](#) for details). All were real slogans used previously or currently by a wide array of organizations. However, linguistic variables were not available for all of the slogans. For instance, because the slogan “Beanz meanz Heinz” does not contain any dictionary-approved words, we could not measure the linguistic properties of the words in the slogan. We thus excluded 10 such slogans, leaving us with a final sample of 820 slogans. The stimuli constitute a reasonably representative sample of actual, English-language brand slogans.

Procedure. Each participant evaluated a randomly selected subset of 50 slogans, similar to [Cortese et al. \(2010\)](#). Participants viewed the slogans one at a time in random order, and the brand was shown below each slogan. For each slogan, participants rated *slogan liking* (“Overall, how much do you like this slogan?”) and *brand attitude* (“Based on this slogan, what is your attitude toward the brand?”). As control variables, they also rated *slogan familiarity* (“Prior to this survey, how familiar were you with this slogan?”) and *brand familiarity* (“Prior to this survey, how familiar were you with this brand?”). The measures used scales from 1 to 7 (dislike–like; not familiar–very familiar).

After evaluating 50 slogans, participants took a brief filler survey before completing a surprise recognition test, similar to that used by [Cortese et al. \(2010\)](#). Participants viewed 100 brand slogans—the 50 that they had previously evaluated (i.e., “old”) and 50 slogans that they had not evaluated but were evaluated by other participants (i.e., “new”). The slogans appeared onscreen one at a time, and participants indicated whether or not they had evaluated the slogan earlier during the survey. The study lasted approximately 10–15 minutes, which is comparable to other similar studies ([Cortese et al. 2010](#)).

Measured Variables. Slogans were the unit of analysis in this study. Each of the 820 slogans was evaluated by approximately 35 participants. We calculated a score for each slogan by averaging the responses (i.e., liking ratings or familiarity judgments) across all participants who evaluated the slogan. Thus, for each slogan, we obtained mean

ratings of slogan familiarity, slogan liking, brand familiarity, and brand attitude.

We also calculated a memory accuracy score for each slogan by subtracting the “false alarm rate” from the “hit rate” ([Cortese et al. 2010](#)). The “hit rate” refers to the percentage of participants who correctly reported that they had seen the slogan. The “false alarm rate” refers to the percentage of participants who incorrectly reported that they had seen the slogan despite not having seen it. The measure of *memory accuracy* equals the hit rate minus the false alarm rate. A score of zero indicates random guessing, whereas a score of 100% indicates perfect memory.

Linguistic Variables. To calculate the linguistic properties of the slogans, we first decomposed each slogan into its constituent words (e.g., “Just do it” became “just,” “do,” and “it”). This yielded 4,527 word-units across the 820 slogans. Next, we used validated databases (described below) to retrieve linguistic measures for each of these 4,527 word-units. As is standard in linguistics research ([Balota et al. 2004](#); [Kuperman et al. 2014](#)), we retrieved a host of lexical, semantic, and affective variables known to influence word processing, including some not described here. We report full details of all variables, as well as the procedures for selecting our key variables, in [web appendix B](#). For simplicity and clarity, however, we describe only our key linguistic variables here.

We measured *slogan length* by counting the number of words in the slogan, and we created a *brand name* variable by dummy coding whether the brand name was present in the slogan (1) or not (0). We assessed *word frequency* with contextual diversity, which is the number of different semantic contexts in which the word occurs in a large corpus ([Adelman, Brown, and Quesada 2006](#)). As is standard, we log-transformed the frequency measure to correct for skew. We determined the *perceptual distinctiveness* of the words using orthographic Levenshtein distance (LD) ([Balota et al. 2007](#)).³ We obtained values for *concreteness* from [Brysbaert, Warriner, and Kuperman \(2014\)](#). Finally, for word frequency, distinctiveness, and concreteness, we computed slogan-level scores by averaging the scores across all word-units in each slogan for each variable. For instance, the concreteness of “Think different” was the average concreteness of “think” and “different.” There were two exceptions to this procedure. First, we had to omit non-words (e.g., “Betcha” in “Betcha can’t eat just

2 We included 845 slogans in the data collection phase of this study, but afterward, we discovered that 15 of the slogans were duplicated in the composite list. We did not initially detect the duplications because they included minor variations in brand names (e.g., both Alka Seltzer and Alka-Seltzer were included) or slogans (e.g., appearing once with and once without a period). In these 15 cases, we averaged the liking, memory, and familiarity data across the two versions of the slogan, leaving 830 unique slogans, and resulting in a final sample of 820 slogans after excluding the 10 slogans that contained no dictionary-approved words.

3 Perceptual distinctiveness is typically measured via LD, which is the number of substitutions, insertions, and deletions necessary to transform one word into another. For instance, transforming “boy” into “toys” requires one substitution (b → t) and one insertion (s), yielding an LD of 2. Orthographic LD is the mean number of operations necessary to transform a given word into its 20 most orthographically similar words in the lexicon. This is essentially a measure of how visually distinct a given word is; higher scores indicate higher distinctiveness from other words in the lexicon.

one”) because they were not available in the lexical databases. Second, as is common practice in text analysis (Packard and Berger 2021), we excluded “stop words” such as articles (e.g., “the”) and prepositions (e.g., “of”) because they tend to skew measures without adding substantial semantic content.

Results

We performed multivariate regression analyses using the linguistic variables to predict liking and memory for the 820 unique slogans. Liking ratings varied substantially across slogans ($M = 4.39$, $SD = 0.96$, range = 1.47–6.58) and were normally distributed (skew = -0.24 , kurtosis = -0.51). Memory accuracy (i.e., hits minus false alarms) also varied substantially across slogans ($M = 86.98\%$, $SD = 13.15\%$, range = 2.32–100%) but was not normally distributed (skew = -1.97 , kurtosis = 5.77). We therefore square-transformed memory accuracy, which yielded a more normal distribution (skew = -1.17 , kurtosis = 1.00). The raw and transformed measures of memory accuracy yielded similar results, so for simplicity, we report the raw measure here. Table 1 presents the summary statistics of the dependent and predictor variables and their intercorrelations. Note that liking and memory were not correlated, $r = -0.02$, $p = .51$, which reveals that likable slogans may not be memorable slogans, and vice versa.

Liking. To estimate the collective effect size of the five linguistic factors, we entered slogan familiarity (a control variable) in the first block of a stepwise linear regression (table 2, model 1). Familiarity explained a large and significant percentage of the variance in ratings of slogan liking, $F(1, 818) = 692.77$, $p < .001$, $R^2 = 0.46$; more familiar slogans were liked more ($b = 0.48$, $SE = 0.02$, $t = 26.32$, $p < .001$). Importantly, however, adding the five linguistic factors to the model (i.e., model 2) collectively explained a significant amount of additional variance in slogan liking, $F(5, 813) = 14.80$, $p < .001$, $\Delta R^2 = 0.05$. As predicted, slogans were liked more when they included more frequent words ($b = 0.24$, $SE = 0.08$, $t = 3.15$, $p = .002$) and more distinctive words ($b = 0.21$, $SE = 0.08$, $t = 2.75$, $p = .006$), and when they omitted the brand name ($b = -0.37$, $SE = 0.05$, $t = 6.81$, $p < .001$). Including less concrete words also improved slogan liking, though only marginally ($b = -0.09$, $SE = 0.05$, $t = 1.88$, $p = .060$).

Memory. On its own (i.e., table 2, model 3), slogan familiarity did not significantly predict memory accuracy ($b = 0.63$, $SE = 0.34$, $t = 1.84$, $p = .066$, $R^2 = 0.00$). However, adding the five linguistic factors to the model (i.e., model 4) significantly and substantially improved the fit, $F(5, 813) = 47.56$, $p < .001$, $\Delta R^2 = 0.23$. These additional factors explained nearly a quarter of the variance in memory accuracy. As predicted, slogans were more

memorable when they were longer ($b = 1.35$, $SE = 0.15$, $t = 9.12$, $p < .001$) and when they included infrequently used words ($b = -7.74$, $SE = 1.31$, $t = 5.92$, $p < .001$), more concrete words ($b = 4.16$, $SE = 0.85$, $t = 4.90$, $p < .001$), and the brand name ($b = 7.31$, $SE = 0.92$, $t = 7.94$, $p < .001$).

Results of the hit and false alarm rates, analyzed separately, are reported in web appendix B. This supplemental analysis revealed that the same linguistic factors that predicted overall memory accuracy (table 2) also tended to predict hit rates, but not false alarm rates (table A6 in web appendix B). Thus, the effects on overall memory accuracy are largely attributable to correct recognition of seen slogans (i.e., hits) rather than to false recognition of unseen slogans (i.e., false alarms). This result is consistent with findings from memory of single words (Cortese et al. 2010).

Comparison to Alternative Measures. The analyses presented above are based on measures that are averaged across individual words in the slogan. We replicated our analyses using alternative, non-average measures such as the max, min, and range of values within the slogan. For instance, rather than averaging the word frequencies of “just,” “do,” and “it,” we instead used the max, min, and range of those frequencies (also distinctiveness and concreteness scores) in separate models. These alternative models provided a test of whether the “average” model (i.e., the model in which the linguistic properties are averaged across words within the slogan) is the best model for predicting slogan liking and/or memory. Indeed, although the differences among models were small, the “average” model was the best performer for both slogan liking and slogan memory. Please see table A7 in web appendix B for details.

Robustness Test with Brand Attitude. Marketers care not only about whether consumers like a slogan but also about whether they like the brand. To test whether the linguistic properties of slogans may have a similar effect on brand attitude, we performed the same analyses, but with brand attitude and brand familiarity replacing slogan liking and slogan familiarity, respectively. The results were similar (table A8 in web appendix B), providing initial evidence for the linguistic effects at the brand level.

Replication Study. We tested the reliability of the observed results by conducting an exact replication with an online sample of 404 participants recruited from Amazon’s Mechanical Turk. The procedure was identical to the main study described above. The results were also consistent with those of the main study; all five of the key linguistic variables also significantly predicted liking and/or memory in this replication study (web appendix B, table A9).

Combined Analysis. To maximize reliability, we also analyzed results from the original lab sample and the online replication sample together. As illustrated in figure 2, the five linguistic variables again predicted slogan

TABLE 1
DESCRIPTIVE STATISTICS AND INTERCORRELATIONS (PEARSON *r*)

Variable	<i>M</i>	<i>SD</i>	Min	Max	1	2	3	4	5	6	7	8
1 Slogan Familiarity	2.47	1.35	1.03	6.86	—							
2 Slogan length	5.65	2.93	1.00	27.00	−0.15***	—						
3 Word frequency	3.47	0.40	1.42	3.92	0.08*	0.27***	—					
4 Distinctiveness	1.70	0.39	1.00	4.80	−0.01	−0.27***	−0.56***	—				
5 Concreteness	2.70	0.50	1.33	4.95	0.04	−0.04	−0.21***	−0.07	—			
6 Brand name	0.28	0.45	0.00	1.00	−0.07*	0.15***	0.01	−0.10**	0.03	—		
7 Slogan liking	4.39	0.96	1.47	6.58	0.68***	−0.12***	0.11**	0.04	−0.05	−0.23***	—	
8 Slogan memory (%)	86.98	13.15	2.32	100.00	0.06	0.26***	−0.15***	−0.03	0.21***	0.29***	−0.02	—

p* < .05.*p* < .01.****p* < .001.

TABLE 2
REGRESSION RESULTS, STUDY 1

Predictor	Dependent variable			
	Slogan liking		Slogan memory	
	(1) Base	(2) Linguistic	(3) Base	(4) Linguistic
Control: slogan familiarity	0.48*** (0.02)	0.47*** (0.02)	0.63 (0.34)	1.34*** (0.31)
Linguistic variable				
Slogan length		0.00 (0.01)		1.35*** (0.15)
Word frequency		0.24** (0.08)		−7.74*** (1.31)
Distinctiveness		0.21** (0.08)		−1.44 (1.31)
Concreteness		−0.09 [†] (0.05)		4.16*** (0.85)
Brand name		−0.37*** (0.05)		7.31*** (0.92)
Intercept	3.20*** (0.05)	2.40*** (0.42)	85.44*** (0.96)	92.14*** (7.11)
<i>F</i> ²	0.46***		0.00	
Marginal <i>F</i> ²		0.05***		0.23***

NOTES.—Unstandardized coefficients; standard errors appear in parentheses. Slogan liking was rated on a scale from 1 (dislike) to 7 (like); slogan memory is % correct (hits—false alarms).

[†]*p* = .06.***p* < .01.****p* < .001.

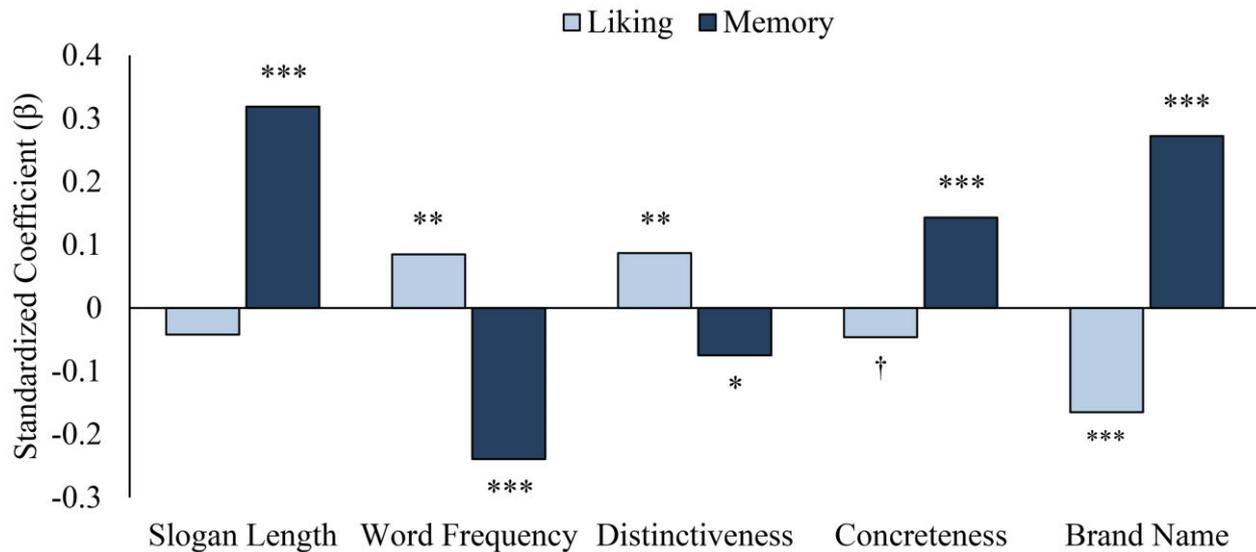
liking and memory. Results of this combined analysis are reported in [table A9 in web appendix B](#). Finally, we also tested whether any of these five linguistic factors interacted with brand familiarity in predicting slogan liking and/or memory. Of the 10 possible interactions (i.e., 5 linguistic factors × 2 dependent variables), only one was significant: including the brand name in the slogan improved memory of the slogan more for highly familiar brands than for less familiar brands. See [web appendix B](#), “Interaction Model with Brand Familiarity.”

Discussion

Study 1 reveals five linguistic properties that predict slogan liking and memorability: the length of the slogan, the frequency, distinctiveness, and concreteness of its words, and the inclusion of the brand name. As predicted, the

linguistic properties that make slogans easier to process tend to increase slogan attitudes but decrease slogan memory, whereas properties that make slogans harder to process tend to decrease slogan attitudes but increase slogan memory. Those linguistic effects tended to be larger on memory than on liking. As shown in [figure 2](#), longer slogans slightly decreased liking but had a large positive effect on memory. More frequently used words slightly increased liking but had a large negative effect on memory. More perceptually distinctive words also increased liking and decreased memory, although these effects were small. Concrete words marginally decreased liking but moderately improved memory. Finally, including the brand name in the slogan had a similar effect as using disfluent words: slogans that included a brand name were less liked but better remembered, and both effects were relatively large. We observed these effects across 820 real brand slogans, some

FIGURE 2

EFFECT SIZES (β) OF THE LINGUISTIC VARIABLES, COMBINED ANALYSIS, STUDY 1

NOTES.—† $p < .075$; * $p < .05$; ** $p < .01$; *** $p < .001$.

of which were familiar to participants and others of which were not. Importantly, the effects held after controlling for participants' familiarity with the slogan, which suggests that the number of times that participants had seen a slogan before completing our study cannot explain the results.

STUDY 2

In study 2, we tested whether we could influence the liking and memory of real brand slogans by altering the linguistic properties that significantly predicted slogan liking and memory in study 1: slogan length, word frequency, distinctiveness, concreteness, and the presence of the brand name. We predicted that reducing the number of words, and including words that are more frequently used, more perceptually distinct, and less concrete would make slogans more likable but less memorable. Building on the results of study 1, we also tested whether adding a brand name to slogans would make the slogan less liked but better remembered and whether removing a brand name would have the opposite effects.

Method

Participants. Two hundred forty-three undergraduates at a U.S. university participated.

Stimuli. We edited 25 slogans from study 1 to create four sets: one intended to improve attitudes (*attitude targets*), one intended to improve memory (*memory*

targets), one in which we removed the brand name from the slogan (*brand name removed*), and one in which we added the brand name to the slogan (*brand name added*). See [web appendix C](#) for a list of the stimuli.

To create the *attitude targets*, we selected eight real slogans from study 1 that scored relatively low on liking. For each slogan, we created a second, edited version by replacing the original words with synonyms that maintained the meaning of the slogan. For some of the revised slogans, we maintained the same length as the original slogan, replacing only key words with synonyms that are (a) more frequently used and/or (b) less concrete ([web appendix C](#)). For example, we edited Club Med's slogan "the antidote for civilization" to "the cure for mankind." For others, we selected relatively long slogans and edited them to be semantically similar but more concise. For instance, we shortened Chevrolet's slogan "The road isn't built that can make it breathe hard" to "No road can challenge it."

To create the *memory targets*, we identified eight real slogans from study 1 that scored low on recognition. Building on the results of study 1, we edited the slogans to include words that (a) are used less frequently and (b) are more concrete but that (c) left the meaning of the slogan unchanged. For example, we changed Toyota's slogan "get the feeling" to "snag the sensation."

To create the *brand-name-removed targets*, we identified five slogans that originally included the brand name and removed it (e.g., "Nothing is more effective than

Anadin” became “Nothing is more effective”). Finally, to create the *brand-name-added targets*, we identified four slogans that originally did not include the brand name and added it (e.g., “Try it, you’ll like it” became “Try Alka Seltzer, you’ll like it”).

Linguistic Fluency. Creating alternative slogans that preserved the meaning of the original slogan while increasing some linguistic variables (e.g., word frequency, distinctiveness) and decreasing others (e.g., slogan length, concreteness) was challenging. Each single word-change affected several of these variables. For instance, substituting a more frequent word also tended to decrease distinctiveness and increase concreteness, due to the intercorrelations among the variables. To address this limitation, we focused on changing the factors that had the largest effects in study 1 (e.g., word frequency, concreteness).

To ensure that our edits successfully manipulated the linguistic variables as intended, we created a weighted measure of each slogan’s *linguistic fluency*: that is, the extent to which the slogan contained relatively (a) few words, (b) frequent words, (c) distinctive words, and (d) abstract words. For each slogan, we standardized each of its variable scores (i.e., slogan length, word frequency, distinctiveness, and concreteness), weighted them by the standardized regression coefficient for that variable obtained in study 1, and then summed them. Thus, each of the four factors was weighted according to the magnitude of its effect on liking and memory (using the data from study 1), and higher standardized scores corresponded to more fluent linguistic properties (i.e., fewer, more frequent, more distinctive, and less concrete words). Across the 16 pairs of attitude targets and memory targets, the slogans that we intended to be more fluent were significantly higher in linguistic fluency ($M = 0.08$, $SD = 0.14$) than the slogans that we intended to be disfluent ($M = -0.08$, $SD = 0.19$), $t(30) = 2.72$, $p = .01$. Thus, we successfully manipulated the target slogans. See [web appendix D](#) for further details.

As an additional validation of these fluency differences, we conducted a follow-up study with human raters. Participants ($N = 636$) rated the slogans on the single-item, 7-point semantic differential scale validated by [Graf, Mayer, and Landwehr \(2018\)](#) for processing fluency. The results confirmed that the slogans intended to be more fluent were indeed processed more fluently ($M = 5.34$, $SE = 0.03$) than their disfluent counterparts ($M = 4.46$, $SE = 0.03$), $F(1, 635) = 827.42$, $p < .001$, and the effect size was large, $\eta^2 = 0.566$.

Procedure. The experiment included 50 slogans: 8 attitude targets + 8 memory targets + 9 brand name targets (25 total) \times 2 versions (original, edited). We created two experimental lists, with each list including only one version of each slogan (either original or edited) and each list

including an approximately equal number of original and edited slogans within each of the target-types (attitude, memory, and brand name targets). Thus, each list included 25 experimental slogans. To reduce the likelihood of a ceiling effect in the recognition memory test, we followed the procedure of prior studies ([Cortese et al. 2010](#)) by including 50 stimuli in the evaluation phase for each experimental list. To do so, we randomly sampled 25 additional slogans from study 1, and we used these *filler slogans* in the evaluation phase for both experimental lists. Finally, to include an equal number of slogans that were not previously shown (i.e., “foils”) in the memory test, we randomly selected an additional 50 slogans to use as foils in the memory test. The filler slogans and foil slogans were constant across conditions.

The procedure was similar to that of study 1. Participants were randomly assigned to evaluate one of the two lists of slogans. The 50 slogans within each list (25 experimental + 25 fillers) were presented one at a time in random order, with the brand name appearing below the slogan. For each slogan, participants rated *slogan liking* (“Overall, how much do you like this slogan?”), *slogan familiarity* (“Prior to this survey, how familiar were you with this slogan?”), and *brand familiarity* (“Prior to this survey, how familiar were you with this brand?”), on scales from 1 to 7. After evaluating the 50 slogans, participants took a brief filler survey and then completed a surprise recognition test. Participants viewed 100 slogans, 50 of which they had previously evaluated (old) and 50 of which they had not seen (new). The slogans appeared onscreen one at a time, and participants indicated whether or not they had previously evaluated the given slogan.

Analyses. For each dependent variable, we analyzed the data using a mixed-effects linear model with random effects for participant and slogan and a fixed effect for edited/original. To further assess memory, we also performed a mixed-effects binary logistic regression (with random effects for participant and slogan, and a fixed effect for edited/original) to identify the odds ratios for slogan recognition.

Results

Attitude Targets. As predicted, participants had a more favorable attitude toward the edited (i.e., fluent) slogans ($M = 4.48$, $SE = 0.11$) than the original (i.e., disfluent) slogans ($M = 3.22$, $SE = 0.11$), $b = -1.26$, $t(1935.20) = 15.17$, $p < .001$. The slogan version (original vs. edited) did not affect participants’ familiarity with the brand, $b = -0.115$, $t(1935.38) = 1.77$, $p = .08$. Counterintuitively, however, participants rated the edited slogans ($M = 2.99$, $SE = 0.34$), which they could not have seen before the experiment, as being more familiar than the original, unedited slogans ($M = 1.93$, $SE = 0.34$),

$b = -1.06$, $t(1934.89) = 12.62$, $p < .001$. These findings are consistent with our prediction that processing fluency underlies the effect of psycholinguistic properties on attitudes: more fluent stimuli seem more familiar (Whittlesea 1993), thereby improving attitudes toward the stimulus (Alter and Oppenheimer 2009). Here, the slogans that we edited to be more fluent were (mis)perceived as being more familiar, and they also improved attitudes. However, participants remembered significantly fewer edited slogans ($M = 0.85$, $SE = 0.03$) than original slogans ($M = 0.89$, $SE = 0.03$), $b = 0.037$, $t(1935.01) = 2.53$, $p = .012$. The results of a mixed-effects logistic regression ($\beta = 0.356$, $SE = 0.14$, $p = .012$) further revealed that the odds of memory for the original slogans were 1.43 times that of the edited slogans (i.e., the original slogans were 43% more likely to be remembered than the edited slogans; 95% CI: 1.08–1.88). Thus, by manipulating the linguistic properties of real brand slogans, we successfully improved attitudes toward those slogans and even increased the slogans' perceived familiarity, but this improvement in attitudes came at the cost of decreased memorability.

Memory Targets. As intended, participants remembered significantly more of the edited (i.e., disfluent) slogans ($M = 0.81$, $SE = 0.04$) than the original (i.e., fluent) slogans ($M = 0.62$, $SE = 0.04$), $b = 0.190$, $t(1935.03) = 9.72$, $p < .001$. A mixed-effects logistic regression ($\beta = 1.04$, $SE = 0.11$, $p < .001$) further showed that the odds of memory for the edited slogans were 2.82 times (i.e., more than double) that of the original slogans (95% CI: 2.28–3.49). However, this increased memorability impaired attitudes toward the slogans; participants reported less positive attitudes toward the edited slogans ($M = 3.74$, $SE = 0.15$) than the original slogans ($M = 4.14$, $SE = 0.15$), $b = -0.395$, $t(1932) = 4.75$, $p < .001$. The slogan version (original vs. edited) did not affect participants' familiarity with the brand, $b = -0.037$, $t(1935) = 0.45$, $p = .65$. Also unsurprisingly, the edited slogans ($M = 2.18$, $SE = 0.24$) were rated significantly less familiar than the original, unedited slogans ($M = 2.53$, $SE = 0.24$), $b = -0.352$, $t(1935.19) = 4.16$, $p < .001$. Thus, by manipulating the linguistic properties of real slogans, we successfully improved the slogans' memorability, but this improvement came at the cost of decreased attitudes toward the slogans.

Brand Name Removed. As predicted, participants reported more favorable attitudes toward the edited slogans without the brand name ($M = 3.28$, $SE = 0.12$) than the original slogans with the brand name ($M = 2.85$, $SE = 0.12$), $b = -0.425$, $t(1209.16) = 4.24$, $p < .001$. However, they remembered the original slogans ($M = 0.89$, $SE = 0.04$) significantly better than the edited slogans ($M = 0.62$, $SE = 0.04$), $b = 0.270$, $t(1208.41) = 11.72$, $p < .001$, with the odds of memory for the original slogans being 5.13 times (95% CI: 3.77–6.99) that of the edited slogans

($\beta = 1.64$, $SE = 0.16$, $p < .001$). Participants (mis)perceived the edited slogans as more familiar ($M = 1.34$, $SE = 0.07$) than the original slogans ($M = 1.19$, $SE = 0.07$); $b = -0.152$, $t(1209.31) = 3.10$, $p = .002$. Thus, removing the brand names from real slogans successfully improved attitudes toward those slogans and even increased the slogans' perceived familiarity but reduced their memorability.

Brand Name Added. Mirroring the results of when we removed the brand name from slogans, editing slogans to include the brand name ($M = 0.92$, $SE = 0.05$) made the slogans more memorable than the originals ($M = 0.65$, $SE = 0.05$), $b = 0.264$, $t(967.02) = 10.73$, $p < .001$, with the odds of memory for the edited slogans being 6.42 times (95% CI: 4.38–9.40) that of the original slogans ($\beta = 1.86$, $SE = 0.19$, $p < .001$). However, participants reported less favorable attitudes toward the edited slogans with the added brand name ($M = 2.84$, $SE = 0.25$) than the original versions ($M = 3.40$, $SE = 0.25$), $b = -0.557$, $t(967) = 4.87$, $p < .001$. Thus, adding brand names made the slogans less likable but more memorable. It did not influence participants' ratings of brand familiarity ($b = -0.015$, $t(968.07) = 0.20$, $p = .84$) nor slogan familiarity ($b = -0.088$, $t(967.02) = 1.06$, $p = .29$). Furthermore, these results cannot be attributed to seeing the brand name twice (i.e., once in the slogan and once beneath it, see web appendix F for details).

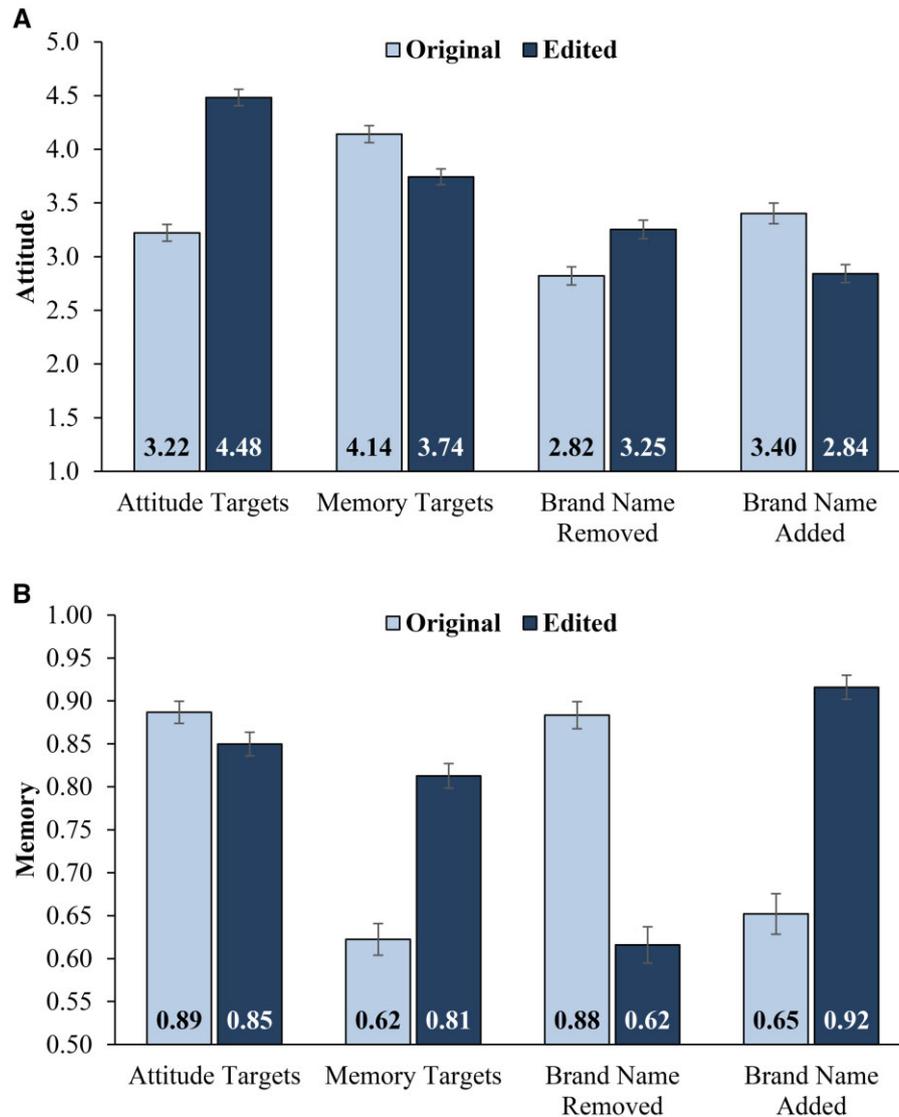
Discussion. By altering the linguistic properties (i.e., slogan length, word frequency, distinctiveness, and concreteness) of real slogans, we successfully improved either participants' attitudes toward or memory of the slogans. Notably, however, improving participants' attitudes toward the slogan impaired their memory of it; conversely, improving memory impaired attitudes. Also, removing the brand name from the slogan improved participants' attitudes toward the slogan but impaired their memory of it, whereas adding the brand name improved memory but impaired attitudes. The results, which we display in figure 3, corroborate our findings from study 1 and demonstrate how marketers, politicians, and organizations of all stripes can improve consumers' attitudes toward or memory of their slogans.

STUDY 3

In study 2, we improved either attitudes toward or memory of slogans by manipulating their linguistic properties to make them more or less fluent. By varying slogan length, word frequency, distinctiveness, and concreteness, we argue that the slogans became easier or harder to process. Study 3 tested this processing fluency explanation by changing a single word in the slogans (e.g., "Echo around the world" to "Echo around the globe") and tracking participants' eye movements while they read the slogan.

FIGURE 3

(A) MEAN ATTITUDE RATINGS AND (B) MEMORY ACCURACY (PROPORTION CORRECT), STUDY 2

NOTE.—Error bars indicate ± 1 SE.

Eye tracking provides two direct but implicit measures of processing fluency: how many times readers look at a word (i.e., fixation count) and how long they look at the word (i.e., fixation duration). When readers easily understand a word, they look at it less often and for less time. Conversely, when readers do not easily understand a word, they look at it more often and for longer, as they attempt to make sense of it (Rayner 1998). Thus, if our processing fluency explanation is correct, then the words that we edited to be more frequent and distinctive and less concrete (e.g., “world”) should elicit fewer and shorter fixations

than words that are less frequent, less distinctive, and more concrete (e.g., “globe”). For comparison, we also examined how long and how often participants fixated on the other words in the slogan that we did not manipulate. Prior research has shown that a single disfluent word tends to selectively slow reading of that word without affecting reading of other words in the text (Reingold and Rayner 2006; Sanchez and Jaeger 2015). We therefore expected the manipulation to selectively reduce fixation counts and durations for the edited word, but not for the other words in the slogan.

Method

Participants. Eighty-four undergraduates (57% females) at a U.S. university participated.

Stimuli. We selected 10 slogans from study 1 and created a second version of each that differed in its linguistic properties, but not meaning. As a stringent manipulation, we edited only a single word in each slogan and replaced it with a synonym that differed primarily on a single factor (i.e., frequency, distinctiveness, or concreteness). We altered five of the slogans by replacing the focal word with a more fluent word, and we altered the other five slogans by replacing the focal word with a less fluent word. For example, we changed Tyco's slogan "a vital part of your world" to "a crucial part of your world" (more perceptually distinct; fluent); we changed Edison Records' slogan "echo around the world" to "echo around the globe" (less frequent; disfluent). See [web appendix C](#) for a complete list of the stimuli. We again validated our slogan manipulations using the measure of linguistic fluency described in study 2 (see [web appendix D](#) for details). Across the 10 slogan pairs, the slogans that we intended to be more fluent were significantly higher in linguistic fluency ($M = 0.11$, $SD = 0.14$) than the slogans that we intended to be disfluent ($M = -0.11$, $SD = 0.13$), $t(18) = 3.72$, $p < .01$. Thus, we successfully manipulated the slogans' linguistic fluency.

Procedure. As in study 2, we created two lists so that each participant evaluated (a) an equal number of fluent and disfluent slogans and (b) only one version of each slogan. We conducted the experiment using a Tobii TX300 remote screen-based eye tracker at a sampling rate of 120 Hz (i.e., 120 gaze metrics per second). We first calibrated the eye tracker to each participant, randomly assigned them to one of the two lists, and left them alone to complete the study. Participants evaluated the slogans, one at a time, by pressing the number keys 1 (dislike) through 7 (like). Each slogan appeared automatically after participants evaluated the previous slogan. Participants saw a fixation cross before each slogan and were told to look at the cross until the new slogan appeared. Participants rated two filler slogans, which were the same in both lists, and then the 10 experimental slogans.

Results

Data Normalization. Because we manipulated one word within each slogan (e.g., "crucial" instead of "vital"), the size of the areas of interest (AOIs) around the target words and slogans varied. Overall, the AOIs were slightly larger for the fluent words ($M = 1.64\%$ of the display area) than the disfluent words ($M = 1.55\%$) and for the fluent slogans ($M = 7.26\%$) than the disfluent slogans ($M = 7.16\%$). Consequently, the fluent condition might

exhibit more and/or longer fixations simply due to covering a larger space. Following standard procedure in such cases ([Holmqvist et al. 2011](#)), we normalized our measures by dividing the raw scores by the total area of the given AOI ([Birmingham, Bischof, and Kingstone 2009](#)). For instance, if a given target word occupied 2.0% of the visual display and elicited a mean of 1.5 fixations, then its normalized fixation count would be 0.75 (i.e., $1.5/2$). The analyses reported below use these normalized measures. As in the previous study, we analyzed the data using linear mixed-effects models with random effects for participant and slogan and fixed effects for AOI (word, slogan) and version (more fluent, less fluent).

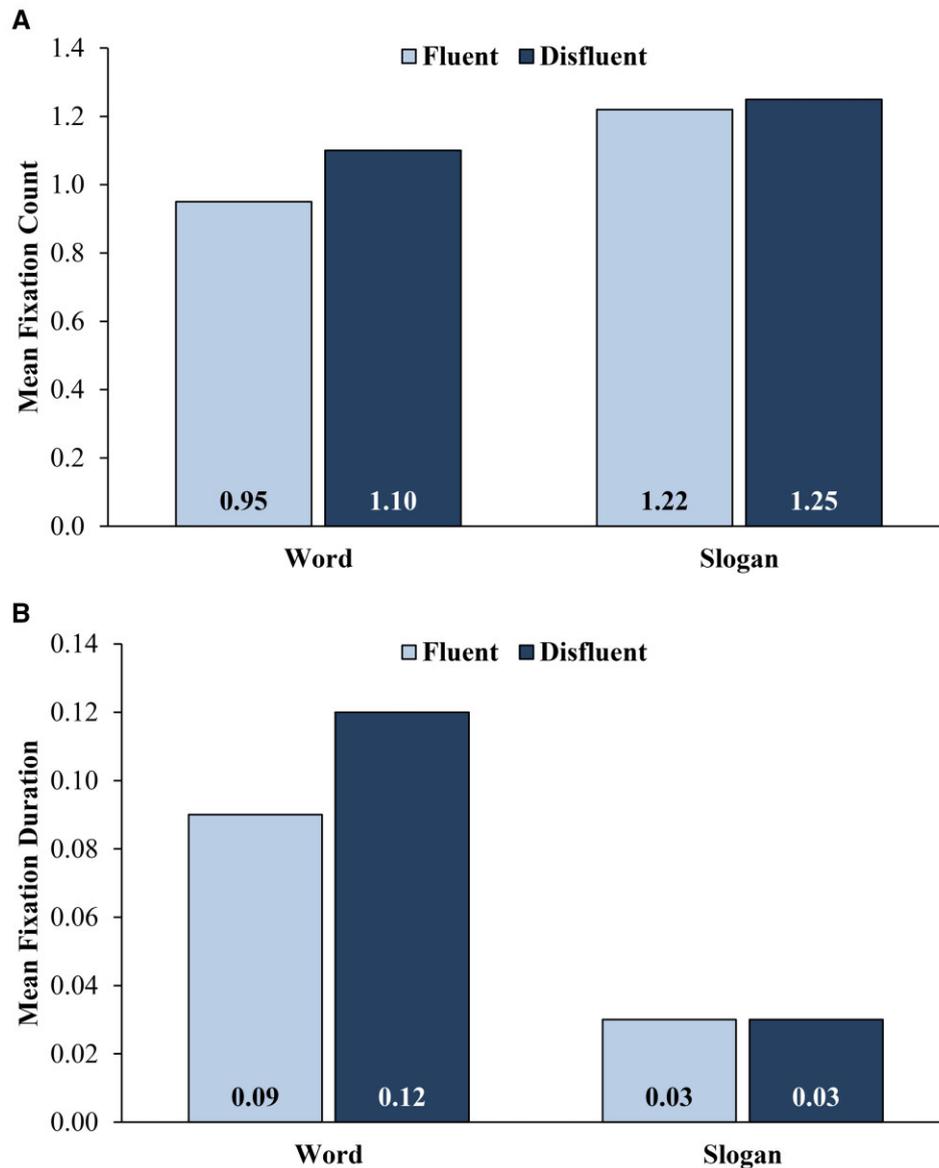
Fixation Count. As predicted, the results ([figure 4a](#)) revealed a significant main effect of slogan version, $F(1, 829.05) = 4.21$, $p = .041$. Specifically, participants fixated more frequently when they read the disfluent version of the slogan ($M = 1.18$, $SE = 0.10$) than when they read the fluent version ($M = 1.09$, $SE = 0.10$). The main effect of AOI was also significant $F(1, 838) = 62.54$, $p < .001$, indicating that participants fixated more on the whole slogan ($M = 1.24$, $SE = 0.10$) than on the target word ($M = 1.02$, $SE = 0.10$). As expected, these effects were further qualified by a significant interaction, $F(1, 838) = 4.90$, $p = .027$. Specifically, participants looked more often at the target words of the disfluent slogans ($M = 1.10$, $SE = 0.16$) than the fluent slogans ($M = 0.95$, $SE = 0.16$), $b = 0.152$, $t(828.99) = 2.60$, $p = .01$, but the manipulation did not influence how frequently participants looked at the other words in the slogans ($p = .44$).

Fixation Duration. The same analysis of fixation durations ([figure 4b](#)) revealed a significant main effect of slogan version, $F(1, 829.16) = 18.99$, $p < .001$. As predicted, participants fixated longer when reading the slogans with disfluent target words ($M = 0.07$, $SE = 0.004$) than when reading the slogans with fluent target words ($M = 0.06$, $SE = 0.004$). The main effect of AOI was also significant, $F(1, 838.01) = 479.65$, $p < .001$, such that the target words elicited longer fixations ($M = 0.10$, $SE = 0.004$) than fixations on any other words in the slogans ($M = 0.03$, $SE = 0.004$). Once again, these effects were qualified by the predicted interaction, $F(1, 838.01) = 21.15$, $p < .001$. Specifically, participants fixated longer on the target words of the disfluent slogans ($M = 0.12$, $SE = 0.008$) than the fluent slogans ($M = 0.09$, $SE = 0.008$), $b = 0.029$, $t(829.28) = 4.61$, $p < .001$, but the manipulation did not influence how long participants fixated on the other words in the slogan ($p = .63$).

Discussion. Biometric eye tracking technology revealed that participants more easily processed slogans that contained words that are more frequently used, more perceptually distinct, and less concrete. Moreover, this fluency difference emerged only when participants processed

FIGURE 4

(A) MEAN FIXATION COUNTS AND (B) MEAN FIXATION DURATIONS ON THE TARGET WORD OR WHOLE SLOGAN IN STUDY 3



NOTE.—Values are normalized to correct for differences in the size of the AOIs.

the target word, not the other words in the slogan. These results are consistent with our hypothesized process: readers needed to look at disfluent words more often and for longer to understand them. Study 3 builds on the previous studies to suggest that consumers are more likely to like but less likely to remember slogans that use more frequent, more perceptually distinct, and less concrete words because they process these slogans more fluently.

STUDY 4

We extend our investigation to a more realistic context in study 4. We showed participants “bumper ads” with either the brand’s original slogan or a new version of the slogan that we edited to be more or less fluent ([web appendix C](#)). On platforms like YouTube, consumers often need to watch a brief (6 seconds or less), non-skippable bumper ad before watching a video. In study 4a, participants

viewed bumper ads and indicated their liking of the slogans. In study 4b, participants watched 30 second YouTube videos with the same set of bumper ads appearing for 6 seconds at the start of each video. After evaluating the YouTube videos (a decoy), participants completed a surprise memory test for the slogans in the bumper ads.

Study 4a: Method

Participants. Four hundred one undergraduates (57% females) at a U.S. university participated in the study.

Stimuli. We edited the words in six of the slogans from study 1 to vary the linguistic properties of the slogan without changing its meaning. For each slogan, we created a simple ad, consisting of the brand name, logo, and slogan, and in some cases the product. The two versions of each ad were identical except for the edited slogan words. For example, Toyota's slogan changed from "Get the Feeling" to "Snag the Sensation" (see [web appendix C](#) for details). We again validated our slogan manipulations using the measure of linguistic fluency developed in study 2 (see [web appendix D](#) for details). The slogans that we intended to be more fluent were significantly higher in linguistic fluency ($M = 0.13$, $SD = 0.18$) than the slogans intended to be disfluent ($M = -0.13$, $SD = 0.08$), $t(6) = 2.64$, $p = .039$. Thus, we successfully manipulated the slogans.

Procedure. As in the previous studies, we created two lists, so that each participant evaluated only one version of each ad, and an equal number of fluent and disfluent slogans. The procedure was identical to that of study 1, except that each participant evaluated six ads, which appeared one at a time in random order, and did not complete the surprise memory test. For each ad, participants rated *slogan liking*, *brand attitude*, *slogan familiarity*, and *brand familiarity* on scales from 1 to 7.

Study 4a: Results

Each participant evaluated three fluent slogans and three disfluent slogans. As in the preceding studies, we analyzed the data using a linear mixed-effects model with random effects for participant and slogan. As predicted, participants liked the fluent versions of the slogans ($M = 3.98$, $SE = 0.13$) more than the disfluent versions ($M = 3.22$, $SE = 0.13$), $b = -0.761$, $t(2399.98) = 10.26$, $p < .001$. They similarly expressed more positive attitudes toward brands with fluent slogans ($M = 4.23$, $SE = 0.13$) than disfluent slogans ($M = 3.69$, $SE = 0.13$), $b = -0.542$, $t(2399.68) = 8.19$, $p < .001$. Moreover, participants claimed to be more familiar with the fluent slogans ($M = 2.18$, $SE = 0.24$) than the disfluent slogans ($M = 1.83$, $SE = 0.24$), $b = -0.357$, $t(2398.99) = 5.12$, $p < .001$, even though half of the fluent slogans were actually the (new) edited versions that we created. Participants similarly rated the brands as more

familiar for the fluent slogans ($M = 4.77$, $SE = 0.87$) than for the disfluent slogans ($M = 4.68$, $SE = 0.87$), $b = -0.099$, $t(2396.90) = 1.95$, $p = .05$, although this difference was small.

In sum, study 4a replicated the results of study 2 in a more realistic setting. It also revealed that a slogan's linguistic properties not only impact slogan liking but also shape brand attitudes: participants had more favorable attitudes toward brands that used fluent compared to disfluent slogans. Thus, firms can improve a slogan's likability and its brand image by varying the linguistic properties to make its words more fluent.

Study 4b: Method

Participants. Four hundred eighty-seven undergraduates (52% females) at a U.S. university participated.

Stimuli. We used the six bumper ads from study 4a as the target stimuli. We also included four filler ads to use in the memory task. The filler ads were conceptually and visually similar to the target ads, but we did not manipulate the slogans in them. As in the preceding studies, we created two experimental lists, so that each participant saw only one version of each target ad, and each participant saw an equal number of fluent and disfluent slogans. The filler ads were the same across both lists.

Procedure. To disguise the purpose of the study, we told participants that we were studying YouTube videos and instructed them to watch 10 videos. Each video began with a 6 second bumper ad, followed immediately by 30 seconds of sports highlights. To create a viewing situation that parallels the way that most consumers view ads online, we did not mention the bumper ads in the instructions. To minimize primacy and recency effects on the subsequent memory task, we had participants view the filler ads in the first, second, ninth, and tenth videos. The six target ads appeared, randomly, before videos 3–8. To maintain the cover story, we asked participants three questions after they finished watching the videos (e.g., "What is your overall attitude toward these YouTube videos?"). Participants then completed an unrelated filler task that lasted approximately 8 minutes. Finally, participants completed a surprise recognition memory test, consisting of 20 slogans: 10 were "old" (i.e., 6 targets + 4 primacy and recency fillers seen during the YouTube video phase) and 10 were "new" (i.e., 10 fillers not previously seen). We asked participants to "indicate whether you saw each slogan earlier during the survey" by checking either "yes" or "no." The 20 slogans appeared in random order.

Study 4b: Results

We used the same linear mixed-effects model as in the preceding studies to analyze the data. As predicted,

participants better remembered the disfluent versions of the slogans ($M = 0.59$, $SE = 0.04$) than the fluent versions ($M = 0.44$, $SE = 0.04$), $b = 0.152$, $t(2912.07) = 8.47$, $p < .001$, and the results of a mixed-effects binary logistic regression analysis revealed that the odds of memory for the disfluent slogans were 1.88 times (i.e., nearly double) that of the odds of memory for the fluent slogans ($\beta = 0.631$, $SE = 0.08$, $p < .001$; $\exp(\beta)$ 95% CI: 1.62–2.18). Study 4b thus confirms that slogans with less fluent words are better remembered, even when participants were incidentally exposed to the slogans in a more realistic context.

Replication: Slogan Recall

As an additional robustness test of these results, we conducted a modified version of study 4b that used an alternative memory measure: free recall. Specifically, we were interested in how often the manipulated target words would be correctly recalled in the disfluent versus fluent versions of the slogans after incidental exposure during the brief YouTube bumper ads. As predicted, the results replicated those of study 4b: participants better recalled the disfluent versions ($M = 0.17$, $SE = 0.01$) of the slogans than the fluent versions ($M = 0.12$, $SE = 0.01$), $t(531) = 4.43$, $p < .001$ (see [web appendix G](#) for details).

STUDY 5

Do the words in an advertising slogan influence the success of the ad? In line with industry practice and the literature, our previous studies measured slogan attitude and memory. However, attitude and memory measures are limited because they do not directly assess whether the slogan changes consumers' behavior. Our final study attempts to address this limitation by switching to the context of online advertising, where it is possible to measure whether a slogan directly influences behavior. Specifically, we test whether the words in an actual ad slogan influence if users click on a social media ad. We worked with a small business to create a fluent and a disfluent version of a slogan for its audio recording website and ran a field experiment to examine which version attracted more clicks. Because clicking does not require the consumer to remember the slogan before responding to it, we predicted that clicking behavior would mirror the effects on slogan liking such that the fluent version of the slogan would attract more clicks on the ad than the disfluent version.

Method

We partnered with a sound recording company, audio-issues.com, to conduct a field experiment through the Facebook Ads platform. We created two versions of a slogan for an audio-issues.com ad. The ads were identical except for the edited slogan words. We launched both

versions of the ad on the same day with a budget of \$10 per day. The ad targeted men and women aged 25–55 years old with an interest in “sound recording and reproduction.” We told Facebook to optimize the ads for clicks because our focal metric was click-through-rate (CTR). The ads ran for 14 days, and 101,224 Facebook users were exposed to the ad.

Stimuli. We created a fluent and a disfluent slogan for the company's “Quick Mix Checklist,” a free product that audio-issues.com uses to attract customers as part of a larger inbound marketing campaign. Both versions used words that meant the same thing, but the fluent version relied on words that are more frequently used and less concrete. The fluent version was: “110 tricks to make awesome mixes from your home studio.” The disfluent version was: “110 tips to forge astounding mixes from your residential studio.” The measure of linguistic fluency that we developed in study 2 (see [web appendix D](#) for details) confirmed that the fluent version was more fluent than the disfluent version ($M = 0.13$ vs. -0.13).

Pretest. We conducted a pretest with 201 participants on Prolific to further confirm that consumers perceived the fluent version as more fluent than the disfluent version. Participants viewed either the fluent or disfluent version of the slogan and rated its fluency, using the same single-item measure as in study 2 (“how easy is it to process this slogan?”; adapted from [Graf et al. 2018](#)). As intended, participants rated the fluent slogan as being significantly more fluent than the disfluent slogan ($M = 4.50$ vs. 3.48 , $t(199) = 4.31$, $p < .001$, $d = 0.61$).

Results and Discussion

The experiment allocated the same budget to the fluent (\$275.86) and disfluent (\$275.87) versions of the ads, and the fluent and disfluent versions received a similar number of impressions (50,523 and 50,701, respectively). As predicted, however, the fluent version of the ad earned more clicks (841 vs. 658), a higher CTR (1.66% vs. 1.30%; $\chi^2 = 23.34$, $p < .001$), and a lower cost-per-click (CPC: \$0.33 vs. \$0.42).

A field experiment using the Facebook Ads platform revealed that slogans' fluent (vs. disfluent) linguistic properties have a similar effect on clicking behavior as they have on slogan attitudes. Specifically, a slogan that contained less concrete and more frequently used words attracted more clicks, a higher CTR, and a lower CPC than a synonymous slogan that contained more concrete and less frequently used words. Slogan words matter, not only for upper-funnel measures like slogan liking and recognition but also for lower-funnel behavior.

GENERAL DISCUSSION

We respond to the call to challenge the boundaries of consumer research (MacInnis et al. 2020) by using multiple methods and harnessing knowledge from cognitive psychology and linguistics to illuminate a marketing-relevant phenomenon. Slogans are an integral part of a brand's DNA. Firms want to write slogans that consumers remember and like, but marketers do not have clear advice for how to do this. Our research gives marketers an objective method by which they can improve attitudes toward or memory of slogans: change the lexical and semantic properties of the words.

Consumers have more favorable attitudes toward slogans that use fewer words, omit the brand name, and contain words that are more frequently used, perceptually distinct, and abstract (studies 1, 2, and 4). However, the same linguistic properties that make slogans more likable also make them less memorable (studies 1, 2, and 4). This is because consumers more fluently process slogans that are shorter, omit the brand name, and contain frequently used, perceptually distinct, and abstract words. Specifically, they fixate less often and for less time on slogan words that are frequently used, perceptually distinct, and less concrete (study 3). Consequently, when consumers encounter fluent slogans, they are more likely to like (study 4a) and click on (study 5) the ads but remember them less accurately (study 4b). Our research thus advances the literature, which has explored only a limited range of linguistic characteristics of slogans (i.e., slogan length and inclusion of the brand name), and only in isolation, to provide an integrative framework documenting how fluency helps explain which linguistic characteristics make slogans more likable, and which characteristics make slogans more memorable. Our research moves beyond the advice to write slogans that are "creative" or that "capture the soul of the brand" by showing how advertisers, public policy makers, and organizations of all types can craft likable or memorable slogans.

Conceptual Implications: A Framework for Understanding Slogan Linguistics

We contribute to scholars' understanding of brand slogans by identifying fluency as a mechanism that can explain how different linguistic characteristics influence the extent to which consumers like and remember a slogan. Previous research has either examined slogans holistically, by focusing on their overall meaning rather than the properties of their individual words (Allard and Griffin 2017; Dimofte and Yalch 2007; Kohli et al. 2007; Kronrod et al. 2012), or disjointedly, by investigating how one or two particular characteristics (e.g., slogan length and/or brand name inclusion) influence one particular type of consumer response (i.e., liking or memory but not both; Dass et al.

2014; Kohli et al. 2013). In contrast, we develop a parsimonious framework that explains how a range of linguistic characteristics influence both liking and memory of brand slogans.

By investigating both slogan liking and memory, we demonstrate that the linguistic characteristics that facilitate liking hinder memory, and vice versa. We thus reveal an unrecognized tradeoff between the extent to which consumers like a slogan and the extent to which they remember it. Our research thereby helps explain why studies that have measured slogan memory (Kohli et al. 2013) report different results than studies that have measured attitudes (Dass et al. 2014): the same characteristics that make a slogan more memorable (e.g., slogan length) may not make it more likable, and vice versa.

As advances in natural language processing continue to unearth additional measurable linguistic characteristics, our framework offers a promising guide to predict how emerging linguistic variables are likely to influence consumers. If the variable makes a slogan (or sentence, brand name, etc.) easier to process, its effects should be similar to including words that are frequently used yet visually distinct: consumers will have a more favorable attitude toward the slogan. In contrast, if the variable makes a slogan harder to process, its effects should be more similar to including the brand name or using words that are concrete: consumers will better remember the slogan.

Practical Implications: How Can Brands Improve Their Slogans?

Before they can answer this question, marketers need to set their objective: do they want their slogan to be more liked or better remembered? Our research reveals a tradeoff: the linguistic properties that improve attitudes toward slogans tend to also impair memory, but words that make a slogan easier to remember also make them harder to like (figure 5).

Whether marketers should seek to improve attitudes toward or memory of slogans depends on whether the brand is already well known. Memorable slogans help brands build awareness, which is the initial stage in the customer decision journey (Batra and Keller 2016). Unknown brands benefit when more consumers become aware of them. Thus, brands that are new, have a small market share, or are trying to expand to new markets would benefit by using less fluent slogans that include the brand name along with words that are less frequently used, less distinctive, and more concrete.

Established brands, in contrast, have less to gain from a memorable slogan and more to lose from an unlikable slogan. Brands that are already well known should therefore create fluent slogans that are shorter, omit the brand name, and use words that are frequent, perceptually distinct, and abstract. Coca-Cola has generally followed this strategy

FIGURE 5

MANAGERIAL GUIDE: WHAT WORDS SHOULD A BRAND USE IN ITS SLOGAN?

	Brand Type	
	New / Earlier in lifecycle Unfamiliar brands Niche / Seek controversy	Established / Later in lifecycle Familiar brands Market leaders / Seek broad audience
<i>Which objective should the brand pursue?</i>	<i>Craft a memorable slogan</i>	<i>Craft a likable slogan</i>
Should the slogan be long?	Yes	No
Should the slogan use common words?	No	Yes
Should the slogan use distinct words?	Probably not (more data needed)	Yes
Should the slogan use concrete words?	Yes	Probably not (more data needed)
Should the slogan include the brand name?	Yes	No

over its 130 year history. When Coke was young, its slogans tended to be longer, mention the brand name, and rely on less frequently used (relatively), concrete words: “Coca-Cola revives and sustains” (1905); “The great national temperance beverage” (1906); and “Whenever you see an arrow think of Coca-Cola” (1910). By the 21st century, Coke had become ubiquitous, and its slogans tended to be shorter, omit the brand name, and rely on frequently used, abstract words: “Enjoy” (1999); “Open happiness” (2010); and “Taste the feeling” (2016).

Our research calls for marketers to evaluate their current slogans in light of their objectives. If their primary objective is to increase awareness, then marketers should try to create slogans with less fluent linguistic properties. Marketers can revise the words in a slogan to make it more memorable without changing the meaning of the slogan, as we did in studies 2–5. If the slogan does not include the brand name, the simplest fix would be to add it. Cerebos (a brand of salt and spices) could change “See how it runs!” to “See how Cerebos runs!” Greggs (a bakery chain) could change “Ready when you are” to “Greggs is ready when you are.” Brands can also look to add words (e.g., “Greggs is ready when you are hungry”), swap more frequent for less frequent words (e.g., “Greggs is prepared when you are famished”), or make the words more concrete (e.g., “Greggs is at your fingertips when your stomach aches”).

Analogously, managers can improve attitudes toward slogans by changing the words to be more fluent, as we did in studies 2–5. Brands that are already well known could first look to drop their name. “Guinness is good for you” could become “It is good for you.” “Like a good neighbor, State Farm is there,” could become “Like a good neighbor, we are there.” Established brands could also look to cut words (e.g., “Like a neighbor”) or use words that are more

frequent and abstract (e.g., “Like a friend”). Marketers can use existing databases to check the extent to which the words in their slogans are frequently used (Brysbart and New 2009), perceptually distinct from other words (Balota et al. 2007), and abstract (Brysbart et al. 2014), and a thesaurus to identify synonyms with linguistic properties that make the slogan more or less fluent, depending on whether the brand wants to be liked or remembered.

Limitations and Opportunities for Future Research

Our research is limited and leaves questions unanswered. For instance, is the tradeoff that we find between liking and memory specific to the linguistic characteristics of slogans, or are disliked things generally remembered better? Scholars have explored the relationship between liking and memory in prior research (Eagly et al. 1999; Alba, Hutchinson, and Lynch 1991). Unsurprisingly, some factors, such as fluency (Alter and Oppenheimer 2009) and the congruence of a product placed within a television program (Russell 2002), tend to help liking while hurting memory, whereas other factors, such as prior exposure (Hintzman 1970; Zajonc 1968) and being a pioneer brand (Alpert and Kamins 1995), tend to boost both liking and memory. A detailed discussion of this literature is beyond the scope of our article, but we encourage scholars to identify ways to potentially make slogans both more likable and more memorable.

One such way could be to give the slogan a meaning that resonates with consumers. Thus, a second question that we do not address is what message should a brand attempt to convey with its slogans? We know that a slogan should reinforce the core value proposition, personality, or story

that the brand hopes to communicate (Keller 1993), but marketers may not know what, specifically, about their brand they want their slogan to communicate. Future research should continue to investigate which meanings slogans should convey in addition to which words they use to do so, as a resonant meaning might help brands design slogans that are both remembered and liked.

A third question: do the effects of a slogan's linguistic properties interact with the image or positioning of a brand? For example, given that luxury brands are more congruent with abstract words whereas utilitarian brands are more congruent with concrete words (Hansen and Wänke 2011; Massara, Scarpi, and Porcheddu 2020), might luxury brands benefit more from relying on slogans with abstract words? Similarly, might exciting brands benefit more from disfluent slogans, in the same way that they benefit from asymmetric logo designs (Bajaj and Bond 2018; Luffarelli, Stamatogiannakis, and Yang 2019)? Are there other types of brands or situations in which disfluent slogans might increase slogan liking (Labroo and Pocheptsova 2016)? Indeed, recent research has shown that consumers may interpret experiences of disfluency positively in certain contexts (Song and Schwarz 2009; Thompson and Ince 2013).

A fourth question: how do the individual linguistic properties interact? Although we find that linguistic word properties that make a slogan more fluent make it more likable but less memorable, evidence for the individual effect of some of the linguistic variables is less consistent. For instance, words that are more frequently used also tend to be less distinct, which means that for most words frequency and distinctiveness will have competing effects. Which effect is likely to dominate? While investigating each of these variables simultaneously provides for a conservative estimate of their collective and individual effects, future research could explore the extent to which these individual effects are robust as well as identify potential factors that moderate them.

A fifth question: how does repeated exposure to a slogan influence how consumers respond to slogans with different linguistic properties? One possibility is that repeated exposure to a slogan will make it more fluent, which could make even slogans with relatively disfluent linguistic properties more likable over time. Another possibility is that the optimal number of exposures to a slogan could depend on whether the words in the slogan have relatively fluent or disfluent linguistic properties. Just as consumers begin to respond negatively after fewer exposures to simpler advertisements compared to complex advertisements (Anand and Sternthal 1990), consumers might become annoyed with slogans that have fluent linguistic properties sooner than they become annoyed with disfluent slogans.

Finally, would our results persist over time? We encourage future research to collect longitudinal data to test whether the effects of slogan linguistics on liking and

memory endure over time. Research on advertising suggests that memory effects tend to remain stable, but liking for ads can change, especially for ads that consumers see frequently (Kronrod and Huber 2019).

Conclusion

Firms spend millions trying to craft slogans that bolster the equity of their brand. Historically, cultivating an effective slogan has been more art than science. Our research attempts to give science a larger role by offering marketers, advertisers, and creatives objective guidance on how to pick the words in a slogan. Brands that want to be remembered should create slogans that are longer, include the brand name, and that use less frequent, less distinct, and more concrete words. Brands that want their slogans to be more liked should create slogans that are shorter, omit the brand name, and that use frequent (yet visually distinct) and less concrete words. BMW, for instance, could craft a more memorable slogan by changing “the ultimate driving machine” to “the peak driving machine,” but this would also make the slogan less well liked. By choosing words strategically, brands can craft more likable or memorable slogans.

Words—so innocent and powerless as they are, as standing in a dictionary, how potent for good or evil they become in the hands of one who knows how to combine them.

Nathaniel Hawthorne, 1848

DATA COLLECTION INFORMATION

The first author supervised the collection of data for the first study by a lab manager and research assistants at Texas A&M University in September 2015. All authors jointly analyzed these data (primarily second author). The first author and third author collected the data for the first study replication on Amazon's Mturk in September 2015. All authors jointly analyzed these data (primarily second author). The first author supervised the collection of data for the second study by a lab manager and research assistants at Texas A&M University in November 2015. All authors jointly analyzed these data (primarily first author). The first author collected the data for the second study—fluency validation study—at the University of Missouri in September 2021. The first author analyzed these data. The first author collected the data for the second study—brand repetition study—at the University of Missouri in October 2022. The first author analyzed these data. The first author collected the data for the third study at Texas A&M University in February 2016. The first and second authors jointly analyzed these data (primarily first author). The first author supervised the collection of data for the fourth study by a lab manager and research assistants at Texas A&M University in March/April 2017. The first and

second authors jointly analyzed these data (primarily first author). The first author collected the data for the fourth study—replication study—at the University of Missouri in March 2022. Research assistants coded the data, and the first author analyzed the data. The third author collected and analyzed the data for the pretest of the fifth study on Prolific in October 2021. The authors jointly administered the fifth study (funded by the third author) in collaboration with audio-issues.com using Facebook Ad Manager in February 2022. The third author analyzed these data. All data are currently archived on the Open Science Framework.

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