

Providing strong evidence for environmental claims in advertising: The moderating role of language complexity

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Abstract

This study examines how the strength of evidence in environmental advertising influences consumers' motivation to seek information and how this effect depends on language complexity. Drawing on persuasion knowledge, language expectancy, and fluency theory, we argue that strong evidence heightens curiosity and search intention only when presented in linguistically complex language that matches audience expectations for evidence-based communication. A 2 × 2 experiment manipulated evidence strength and language complexity in sustainability ads for a dairy brand. Results show that evidence increases curiosity and search intention only under high language complexity, and that complexity reduces skepticism by signaling credibility. The moderated mediation model confirms that curiosity mediates the effect of evidence on search intention when language complexity is high. Findings highlight the persuasive value of linguistic sophistication in evidence-based environmental advertising.

Key words: Evidence-based advertising, Language complexity and Green-advertising

Track: Advertising & Marketing Communications

1. Introduction

Growing public concern over environmental issues has prompted many firms to develop more sustainable products and services. Substantial efforts have been devoted to “green” campaigns designed to persuade consumers to prefer environmentally responsible brands. As skepticism toward such campaigns has intensified, scholars have emphasized the importance of evidence-based advertising in sustainability marketing (Schmuck et al., 2018; Verleye et al., 2022; Ganz & Grimes, 2018).

A central challenge is that evidence-based claims often require a degree of technical or formal language to convey precision and professionalism. Prior research suggests that linguistic complexity can undermine persuasion by violating expectations of clarity and accessibility in commercial communication (Miller & Burgoon, 1979; Averbeck & Miller, 2014). Studies on processing fluency further show that simple, easy-to-read messages are generally perceived as more credible, familiar, and truthful (Reber et al., 1998; Schwarz, 2004; Liu et al., 2022). However, language expectancy theory (LET) proposes that audiences hold context-dependent expectations for appropriate language use depending on the message type and content. When a message presents data, evidence, or certification, recipients may expect a more formal and technical linguistic register (Averbeck & Miller, 2014).

Recent advances in artificial intelligence (AI) and large language models (LLMs) now allow advertisers to fine-tune linguistic complexity to match consumer expectations. This capability raises new questions about how consumers process evidence expressed in more complex language. In sustainability marketing, where credibility and transparency are central, linguistic framing—whether simple or sophisticated—may influence not only comprehension but also motivational responses such as curiosity and the intention to seek more information about a product or brand.

In this study, evidence-based claims are defined as advertising statements presenting verifiable data, certifications, or factual information that substantiate an environmental benefit. Unlike emotional or symbolic appeals, such claims provide concrete support that can be independently evaluated. We examine how evidence strength influences curiosity and information-seeking, depending on the linguistic complexity of the message. We propose that linguistic sophistication moderates the perceived informativeness of evidence and, consequently, consumers’ motivation to engage with sustainability-related content.

2. Theory and Hypotheses

2.1 Evidence Strength and Cognitive Activation

Evidence-based communication—such as data, research findings, or measurable outcomes—typically enhances perceived validity and informativeness in marketing messages (Deighton, 1986; Baek, Yoon, & Kim, 2019). In advertising contexts, evidence can serve as either a peripheral or central cue depending on consumers’ motivation and ability to process

information (Petty & Cacioppo, 1986). When audiences are cognitively engaged, strong evidence promotes elaborative processing and more stable attitudes (Dardis & Shen, 2008). Features such as expertise and evidential support further signal diagnostic and argument quality (Garcia-Marques & Loureiro, 2024). Conversely, overly fluent or simplistic messages encourage heuristic processing and superficial evaluation.

H1: Stronger evidence in an advertising message increases consumers' intention to seek additional information about the product.

2.2 Curiosity as a Mediator

Curiosity is a fundamental motivational mechanism in information processing. According to Loewenstein's (1994) Information Gap Theory, curiosity arises when individuals perceive a gap between what they know and what they want to know, creating cognitive tension that drives information seeking. Within marketing communication, curiosity serves as a psychological bridge linking message characteristics to consumers' motivation to learn more about a brand or product.

Research shows that curiosity is heightened when information requires active meaning-making or inference (Kang et al., 2009). Evidence-based claims can thus trigger epistemic curiosity to acquire knowledge—by conveying informational depth or expertise (Litman, 2005). By contrast, simple, fluent messages reduce perceived information gaps and, consequently, curiosity and elaboration.

H2: The relationship between evidence strength and search intention is mediated by curiosity, such that stronger evidence increases curiosity, which in turn increases search intention.

2.3 Linguistic Complexity as a Moderator

Linguistic complexity refers to the degree of structural and lexical sophistication in a message (Graesser et al., 2004). Complex language reduces processing fluency—the ease of cognitive processing (Reber et al., 2004)—and can prompt more systematic and reflective thought (Alter & Oppenheimer, 2009).

Marketing research extends these insights. Packard (2021) finds that concrete, fluent language improves comprehension, while abstract formulations hinder processing. Technical language, though perceived as credible, can reduce purchase intention due to lower fluency (Liu et al., 2024). Similarly, multilingual or dense packaging impairs fluency (Hüttel-Maack & Munz, 2025), whereas fluent brand communication fosters self-brand connection (DelVecchio et al., 2023). Lowrey (1998) found that strong advertising claims increase brand attitudes only when linguistic complexity is low.

Although fluency theory suggests that complexity weakens persuasion, LET offers a contextual counterpoint. When a message presents evidence or certification, audiences expect precision and formality (Averbeck & Miller, 2014). Complexity can thus enhance credibility by matching these expectations. LET distinguishes lexical (word length, vocabulary diversity) and

syntactic (sentence structure) complexity. While right-branching sentences are easier to read, left-branching or multi-clause structures may convey professionalism and authority, supporting deeper integration of information.

Persuasion knowledge theory (Friestad & Wright, 1994) posits that consumers develop understanding of persuasion tactics, often responding with skepticism. However, Isaac and Grayson (2017) argue that persuasion knowledge also helps consumers extract useful information from credible sources. Thus, linguistic sophistication might serve as a cue of credibility, reducing skepticism and increasing engagement.

H3a: Language complexity reduces perceived skepticism toward an advertising message.
H3b: Language complexity moderates the effect of evidence on search intention, such that the positive effect of evidence is stronger under high complexity.
H3c: The indirect effect of evidence on search intention through curiosity is moderated by language complexity, such that mediation is stronger when complexity is high.

3. Empirical Testing

3.1 Manipulation

Four ad versions were developed for a dairy brand communicating an environmental feed innovation, manipulating evidence strength and language complexity. We used ChatGPT5 to evaluate degree of evidence and degree of language complexity reported in Table 1 below. Low evidence ads (Ad1 and Ad3) scored low on overall evidence rating (2.0 and 1.5) with low verification, low to moderate specificity, and only moderate transparency. High evidence ads (Ad2 and Ad4) scored high on overall evidence rating (both 5.0), with high verification, high specification and high transparency. Low-complexity ads (Ad1 and Ad2) had low lexical complexity with average word lengths of 4.42 and 4.36, while high-complexity versions (Ad3 and Ad4) averaged 5.36 and 5.18 characters. Syntactic complexity ranged from 1.5 and 2.0 for low and 4.0 and 4.5 for high complexity (from ChatGPT5), confirming successful manipulation.

Text	Evidence	Complexity	Evidence rating (1-5)	Lexical complexity (average word length)	Syntactic complexity (1-5)
1	Low	Low	2.0	4.42	1.5
2	High	Low	5.0	4.36	2.0
3	Low	High	1.5	5.36	4.0
4	High	High	5.0	5.18	4.5

Table 1: Manipulation checks of the four advertising scenarios

3.2 Measures

Curiosity (CURI) was measured on a 7-point scale (Ang & Low, 2000): “This ad made me curious about this product,” “The content gave me new information,” and “This ad presented

something I haven't heard before." Search intention (SRCH) was measured using four items: "I'm interested in finding more information," "I would look into this product in a store," "I'd discuss it with others," and "I would consider buying milk from this producer." Skepticism (SKEP) was adapted from Obermiller and Spangenberg (1998) and Darke and Ritchie (2007): "The message is truthful," "The producer is honest," "The ad provides misleading information" (reverse-coded), and "The company tries to provide false information" (reverse-coded). Environmental engagement (ENEG) was included as a control.

3.3 Data and Analysis

A national web panel (N = 288) was used, distributed across the four experimental conditions. Cronbach's alphas were acceptable: CURI = .77, SRCH = .83, SKEP = .94, ENEG = .80. Factor scores were computed for each scale.

Testing H1, regression showed no direct effect of evidence on search intention ($F = 0.13$, $p = .72$). H2 was tested using PROCESS Model 4 (Hayes, 2013), revealing no significant mediation through curiosity (indirect effect = 0.03, 95% CI [-0.11, 0.18]). For H3a, language complexity significantly reduced skepticism ($F = 8.6$, $p = .004$; $B = -0.35$), indicating that more complex language increased perceived credibility.

H3b was not supported; the interaction between evidence and complexity was nonsignificant ($p = .72$). However, H3c was supported: PROCESS Model 7 showed a significant moderated mediation ($F = 92.3$, $p < .001$, $R^2 = .49$). Under low complexity, the indirect effect of evidence on search was nonsignificant (effect = -0.14, 95% CI [-0.33, 0.06]), but under high complexity it was significant (effect = 0.21, 95% CI [-0.01, 0.41]). Curiosity ($B = 0.62$, $p < .001$) and environmental engagement ($B = 0.20$, $p < .001$) had strong effects, while the direct effect of evidence was nonsignificant, indicating full mediation through curiosity.

4. Discussion

This study demonstrates that the persuasive effect of evidence-based environmental claims depends critically on linguistic framing. The interaction is illustrated in Figure 1 below. Evidence alone did not enhance curiosity or information-seeking; these effects emerged only when the message employed linguistically complex language. This moderated-mediation aligns with language expectancy theory, suggesting that audiences expect a formal and sophisticated register when advertisers present data or certifications. When such claims are phrased too simply, they may appear less credible, lowering engagement.

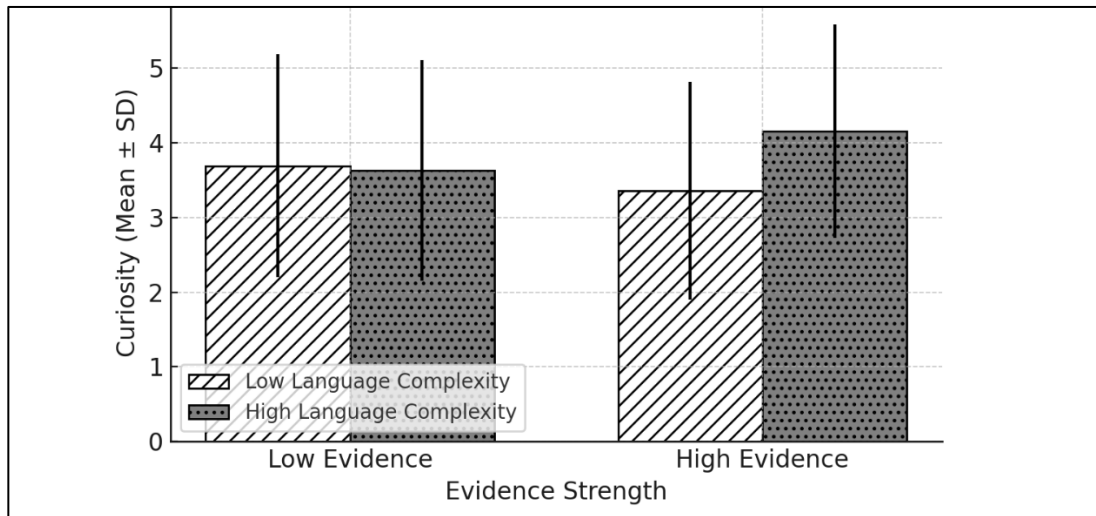


Figure 1: The average score on curiosity items in the four ad scenarios.

The results refine understanding of the fluency–credibility trade-off by showing that lower fluency can enhance informativeness and curiosity when it matches message context. Curiosity functions as the key motivational mechanism linking linguistic form to behavioral intention. The findings also extend persuasion knowledge theory (Friestad & Wright, 1994) by demonstrating that credible linguistic cues—rather than evoking skepticism—can foster trust and deeper engagement.

Managerially, advertisers should consider aligning language style with message content. For evidence-based or technical claims, using more sophisticated language may enhance perceived expertise and reduce skepticism. As AI and LLMs increasingly generate marketing copy, advertisers must ensure that such tools account for contextual appropriateness, not just readability.

Limitations include the focus on a single product category and artificial stimuli. Future studies should test real-world ads across various industries and channels to validate the generalizability of linguistic complexity effects. Additionally, examining emotional tone or cross-linguistic variations could yield further insights into credibility signaling in sustainability communication.

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