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Visual Implied Motion in Marketing: A Dual-Route Framework of Perceptual Persuasion

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Correspondence: Tianyi Zhang (tianyi.zhang@psy.ox.ac.uk)**Received:** 24 November 2025 | **Revised:** 26 March 2026 | **Accepted:** 25 April 2026**Keywords:** dynamism | elaboration likelihood model | implied motion | logo | mental simulation | persuasion

ABSTRACT

Depicting movement in static marketing stimuli, referred to as ‘implied motion’, is widely used across packaging, logos, and advertising, and multimodal brand communications. Despite growing evidence of its persuasive impact, the underlying psychological mechanisms and boundary conditions remain theoretically fragmented. This systematic review synthesizes 31 experimental studies and integrates the findings within the Elaboration Likelihood Model of persuasion. The evidence shows that implied motion first enhances perceptual salience and attentional allocation. From there, its effects operate through two distinct routes. When accompanied by narrative context, implied motion facilitates central-route elaboration through mental simulation, engagement, empathy, and narrative transportation, strengthening brand and product attitudes. Under rapid processing, it functions as a peripheral cue, triggering heuristic inferences (e.g., energy, freshness) and fluency, increasing purchase intention, willingness to pay, and choice. Both routes are moderated by consumer-level factors (e.g., consumption goal, involvement) and design-level factors (e.g., product type, brand-motion fit). By integrating evidence across attention, elaboration, heuristic inference, and attitudinal and behavioural outcomes, this review provides a theoretically grounded account of how dynamic cues embedded in static visuals shape consumer judgment. Implications for marketing strategy and future research directions are discussed.

1 | Introduction

Depicting movement within static visual design, commonly referred to as implied motion, has become an increasingly prevalent strategy across product packaging, advertising, branding, and digital communication. Food imagery portraying pouring liquids, exploding spices, or rising steam (Figure 1); travel photography suggesting live events; and brand logos incorporating directional cues all provide examples of dynamism embedded in static visuals. By leveraging the human perceptual system’s capacity to infer movement from still images (Kourtzi and Kanwisher 2000; Shirai and Imura 2016), implied motion allows marketers to communicate vitality, intensity, and sensory richness without the need for additional verbal elaboration. For example, images of exploding perfume bottles are found to enhance perceived scent intensity and

persistence, ultimately increasing purchase intention (Droulers et al. 2024). In this way, implied motion functions as a form of visual rhetoric that extends beyond the literal representation of the products.

Experimental studies show that implied motion influences consumer responses across multiple stages of information processing. At early stages, it enhances perceptual salience and visual attention (Cian et al. 2015; Li et al. 2019). At later stages, it helps to shape product evaluations, attitudes toward the products and brands, willingness to pay (WTP), and even real choice behaviour (e.g. Amar et al. 2021; Li and Ma 2024; Yu et al. 2022; Zhang et al. 2020). Previous research has also explored the underlying mechanisms, yet the resulting conclusions remain theoretically fragmented. Some studies suggest that implied motion acts as a heuristic cue, triggering

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FIGURE 1 | (A) A screenshot of the Schwartz Flavour Shots ad; (B) Asahi Superdry with steam on cardboard packaging.

immediate conceptual inferences such as freshness, energy, or quality (e.g. Droulers et al. 2024; Du and Wang 2024; Gong et al. 2025). Others indicate that dynamic imagery stimulates mental simulation, empathy, or narrative transportation, implying deeper elaborative processing (e.g. Bünzli et al. 2025; Grigsby et al. 2023; Li and Ma 2024). Moreover, findings are not uniformly positive: effects vary across product types, contextual framing, and brand characteristics, and in some cases, null or reversed effects have been observed (e.g. Boman et al. 2026; Mulier et al. 2021). These mixed findings raise a core question concerning the underlying mechanism, namely, through which psychological processing routes does implied motion influence consumer judgements, and under what conditions does each route dominate? Addressing these questions requires moving beyond format-based categorizations (e.g., advertising vs. packaging, depicting humans vs. objects) and instead examining how implied motion operates across the various stages of information processing.

This systematic review organizes the evidence on the effects of implied motion within the Elaboration Likelihood Model of persuasion (Chaiken 1980; Gigerenzer and Gaissmaier 2011; Petty and Cacioppo 1986). Specifically, we conceptualise implied motion as a dynamic cue that first enhances perceptual salience and attention allocation and subsequently influences persuasion through either peripheral heuristic inference or central-route simulation-based elaboration, depending on involvement, cognitive capacity, and contextual factors. This approach allows us to distinguish between: (1) route-activation conditions on the consumer side; and (2) effectiveness moderators related to brand, product and message characteristics. Based on a systematic review of 31 experimental studies on the use of implied motion in marketing contexts, this paper clarifies (1) how implied motion operates at early-stage perceptual processing, (2) when it acts as a heuristic versus an elaborative trigger, and (3) how these routes shape immediate evaluative and more in-depth relational outcomes. In doing so, we advance persuasion theory by integrating perceptual dynamism cues into a dual-process model of attitude formation and provide marketing practitioners with route-based guidance for deploying visual dynamism elements strategically across marketing touchpoints.

The nature of visual content itself is undergoing rapid change as screen-dominant modern life changes the consumer visual environment. In visually saturated contexts characterized by limited consumer attention (Clement et al. 2013), implied

motion may act as a shortcut to immediate information processing, enabling consumers to draw inferences even when they have limited cognitive resources to spare (Chaiken 1980; Gigerenzer and Gaissmaier 2011). With the increasing accessibility of generative artificial intelligence (Gen AI) tools, dynamic-looking imagery becomes easier to produce and more prevalent in digital environments (Hartmann et al. 2025). Clarifying when dynamic cues function as effective heuristics versus when they require cognitive engagement is both theoretically and practically consequential.

1.1 | Implied Motion as a Dynamicity Cue

Static images that capture moments of frozen action can induce a dynamic mental representation in the observer's mind (Freyd 1983). In fact, the neuroscience literature demonstrates that the brain regions involved in the perception of real motion are also activated when people view static images with implied motion (Goebel et al. 1998; Kourtzi and Kanwisher 2000; Lorteije et al. 2006). Activity in the medial temporal/medial superior temporal cortex (MT/MST), a key region for motion processing, increases when people view photographs depicting implied motion as compared to static photos without such cues. Disrupting the MT/MST area impairs judgements of implied motion (Alford et al. 2007). Motion aftereffects provide further support for shared mechanisms for the processing of both real and implied motion. People who viewed a series of still photographs with implied motion in a particular direction experienced motion aftereffects in the opposite direction (Winawer et al. 2008). The transfer of adaptation from implied motion in static photos to real motion suggests that direction-selective circuits are also activated when seeing implied motion as well. Together, these findings provide the neural basis for how people can perceive implied motion as a dynamic cue.

Interestingly, implied motion perception is not limited to the visual domain. Motion in other modalities has also been shown to activate V5/MT (tactile motion, Amemiya et al. 2017; Wacker et al. 2011; auditory motion, Poirier et al. 2005). Such results explain how auditory motion (e.g., spatial audio), and linguistic descriptions of motion (e.g. “blooms exploding in the air”) can similarly mentally simulate motion perception (see Droulers et al. 2024; Mourey and Elder 2019).

1.2 | Dual-Process Persuasion and Visual Information Processing

Acknowledging that implied motion functions as a dynamic cue, understanding its persuasive impact requires situating it within broader theories of visual information processing and persuasion. Visual meaning construction unfolds through attention allocation, perceptual structuring, decoding, relational integration, and interpretation (Geise and Baden 2015). Within this process, motion holds a privileged status. Decades of perceptual research show that motion strongly influences perceptual grouping, often overriding spatial proximity cues (Driver and Baylis 1989). Even when motion is only implied rather than physically present, dynamic cues can bias perceptual organization. Depictions of movement in static images are found to result in neurologically inferior decoding of stimulus category (Lu et al. 2016), implying the possibility of perceptual processing being shifted away from object-based decoding toward a more contextual and relational interpretation. In other words, implied motion does not merely attract attention; it shapes how visual information is grouped and processed. That said, implied motion in marketing imagery may facilitate the integration of visual elements into meaningful relational patterns (e.g., liquid pouring into a glass signalling freshness or immediacy).

The Elaboration Likelihood Model (Petty and Cacioppo 1986) provides a persuasion framework for clarifying how evaluations are formed in response to marketing visuals using implied motion. Elaboration Likelihood Model posits that persuasion occurs through two routes depending on elaboration likelihood. The peripheral route relies on heuristic processing, which involves efficient judgement strategies that simplify decision-making under conditions of limited motivation or cognitive capacity. The central route entails deep and systematic processing. When individuals engage in central processing, they dedicate considerable cognitive effort to evaluate, scrutinize, and reflect on the content of a message. Implied motion can be a peripheral heuristic cue, triggering rapid conceptual inferences based on recognition of the visual stimuli (Gigerenzer and Gaissmaier 2011) or enhancing processing fluency, thereby allowing consumers to form evaluations and decisions by quickly reducing the target set. Alternatively, when consumers are highly engaged, depictions of movement can prompt the mental simulation of product use, encourage narrative integration, or evoke experiential engagement with the scene depicted (Bünzli et al. 2025; Li and Ma 2024; Mead et al. 2020). Through this route, consumers are engaged with the image at a higher level, which may lead to potentially more durable attitudes.

Importantly, heuristic processing should not be interpreted as a weaker form of persuasion as compared to elaborative processing. Research on ecological rationality demonstrates that heuristics can generate accurate judgements frugally (Chaiken 1980; Gigerenzer and Gaissmaier 2011; West et al. 2020). In visually dense marketing environments characterized by competing stimuli and limited consumer attention, implied motion may therefore exert persuasive influence precisely because it functions as an efficient cue to meaning. Meanwhile, under conditions where consumers engage more (e.g., when they are asked to imagine actively, Petrova and Cialdini 2005), implied motion may facilitate

simulation-based elaboration, leading to enhanced perceived persuasiveness. Taken together, this paper proposes route-dependent mechanisms underlying the effects of implied motion as a marketing tactic: it first enhances perceptual salience, including attention allocation, and then influences consumer judgment either through heuristic inference or through elaborative simulation, depending on the processing conditions. To further examine this proposition, we conduct a systematic review of experimental research on implied motion, with the aim of clarifying when it functions as a peripheral inference trigger versus when it facilitates central-route elaboration, and whether these routes differ in their persuasion outcomes.

2 | Methods

A systematic review was conducted to examine the effects of implied motion used in the context of marketing. This review focused on experimental studies. An exhaustive search of relevant literature, through Scopus and Web of Science, was conducted to ensure a comprehensive and inclusive compilation in line with the systematic review guidelines (Donthu et al. 2021; Paul et al. 2021). Two sets of keywords were used for the search: the words referring to implied motion in static images, “implied motion”, “movement imagery”, “motion imagery”, “visual dynamism”, and “dynamic imagery”; in combination with words that limit the context to marketing, “packaging”, “product communication”, “marketing”, “advertising”, “logo design”. The key words were selected based on an extensive review of related recent literature (e.g., Amar et al. 2021; Farace et al. 2020; Monahan and Romero 2020; Tang et al. 2025). To ensure a thorough search, the same keywords were applied in Google Scholar search as well as the AI-powered search available at Google Scholar (https://scholar.google.com/scholar_labs/search), and the search was expanded by reviewing references in relevant empirical studies. The initial search yielded 314 articles.

Studies were eligible for inclusion if they were published journal articles that were experimental with implied motion manipulations. That said, it should be noted that there were studies that compared static photos with videos, but these were not included as they are not aligned with the definition of implied motion. We limited our search to articles published in English and on or before February 26th, 2026, following previous review-based research. This systematic review approach allowed us to build on existing knowledge about how implied motion has been incorporated in marketing contexts, what kind of effects it exerts, through what mechanisms, and the boundary conditions that have been tested. We narrowed down the articles to $N = 31$ using the established review protocol PRISMA (Liberati et al. 2009; Web Appendix A), ensuring a rigorous and unbiased selection process.

3 | Results

The included studies are published between 2014 and 2026, examining the effects of implied motion in marketing contexts spanning product packaging, brand logos, print and digital ads,

social media posts, email promotions, menu designs, and service recovery communications. Product categories tested also cover a wide range, with a notable concentration on food and beverage contexts (e.g., Du and Wang 2024; Kuntaros et al. 2025; Xiong et al. 2023; Yu et al. 2022; Zhang et al. 2024b), scented products (Droulers et al. 2024; Van Rompay et al. 2014; Zhang et al. 2020), travel ads (Bünzli et al. 2025; Li and Ma 2024), sports-related products and vehicles (Farace et al. 2020; Lim and Childs 2020; Liu and Li 2024; Monahan and Romero 2020), and fashion brands (Tang et al. 2025). Across studies, implied motion is manipulated in several different ways. The most common approach is to alter elements of visual design such that the static images deliver a sense of movement, such as the use of directional cues (e.g., font slant) or motion capture. In addition to visual manipulations, some other studies incorporate verbal motion cues (e.g., motion-focused product names or captions; Droulers et al. 2024; Yu et al. 2023) and crossmodal cues such as panning sound to reinforce perceived dynamism (Mourey and Elder 2019). Methodologically, the outcome measures include evaluation metrics, WTP measures, choice tasks, eye-tracking, and event-related potentials (ERPs). This diverse coverage allows for the examination of the generalisability of implied motion effects across marketing communication domains, as well as the understanding of underlying psychological processes, particularly early-stage perceptual processing.

Consistent with the persuasion framework outlined in the introduction, the studies can be organized according to the information-process stage that they primarily examined (see Web Appendix B for a detailed summary table). In Stage 1, studies focus on showing the effect of implied motion on enhancing attention allocation and perceptual salience; in Stage 2 A, studies provide support for the peripheral heuristic processing route, where conceptual inference and processing fluency are the main mechanisms tested; in Stage 2B, studies examine the central elaboration route, where consumers engage with the narrative that supports the marketing visuals; finally, in Stage 3, few studies focus primarily on downstream attitudinal consequences, including brand loyalty and ad attitude, without explicitly testing why these outcomes manifest. A conceptual model is summarized in Figure 2. The following sections synthesize the findings in different stages, as well as the discussion of boundary conditions and null results.

3.1 | Stage 1: Perceptual Salience and Attention Allocation

Converging evidence from behavioural, eye-tracking, and neurophysiological measures suggests that implied motion reliably enhances perceptual salience and attentional allocation, providing a foundation for subsequent stages of persuasion. Eye-tracking studies show that dynamic cues on product packaging significantly increase gaze duration and fixation frequency, both of which are associated with heightened purchase intention (Kuntaros et al. 2025; Yu et al. 2022). Complementing these findings, reaction-time paradigms show that implied motion facilitates faster detection and classification responses, reflecting heightened perceptual vigilance (Cian et al. 2015; Roque et al. 2020). This advantage persists even in visually cluttered environments such as on grocery store shelves (Yu et al. 2022).

Neurophysiological evidence further corroborates this attentional advantage: implied motion amplifies early ERP components associated with sensory processing (e.g., the P2 component), and participants exposed to such stimuli report more favourable product evaluations (Li et al. 2019). These findings collectively establish that implied motion acts as a powerful attentional magnet that increases the perceptual priority of the focal item depicted in motion and facilitates downstream consumer judgement.

However, this attentional advantage is not unconditional. Although no study has directly measured the attentional resource and its relationship to implied motion responses, preliminary evidence suggests that the effect is sensitive to cognitive load. Zhang et al. (2020) showed that product images with implied motion effectively redirected attention from background elements toward the focal object. Yet when textual information (e.g., slogans) was introduced, increasing cognitive load, the attentional benefit of implied motion was attenuated and became contingent on product type (hedonic vs. utilitarian). This finding is consistent with the cognitive capacity principle of the Elaboration Likelihood Model, indicating that the persuasion outcomes of implied motion depend not only on its perceptual properties but also on the cognitive resources consumers can bring to bear during processing. This insight motivates the next stage of the framework: the role of elaboration likelihood in determining which processing route is activated.

3.2 | Stage 2 A: Peripheral Heuristic Processing through Conceptual Inference and Fluency

A substantial portion of the reviewed literature indicates that the persuasive effects of implied motion frequently operate through peripheral-route mechanisms, including conceptual inference and processing fluency. These mechanisms allow consumers to form rapid evaluative judgements with relatively low cognitive effort.

3.2.1 | Conceptual Inference from Recognition Heuristic

The most consistently supported peripheral mechanism is attribute-based conceptual inference. This form of inference is recognition-based: consumers draw conclusions about product criteria that are not directly observable by mapping movement cues onto stored associations in memory (Gigerenzer and Gaissmaier 2011). Consider a consumer scanning a juice aisle for a freshly squeezed product: packaging that depicts sliced oranges with dripping juice is likely to be recognised faster and evaluated more favourably than packaging that relies solely on a verbal “Freshly Squeezed” claim, because the dynamic visual cue activates the relevant attribute association directly.

Across product categories, implied motion triggers rapid associations between movement and desirable product attributes. For food and beverage products, dynamic cues such as pouring liquids, rising steam, or implied splashes, increase perceptions of freshness, tastiness, energy, temperature, and healthiness (Amar et al. 2021; Gvili et al. 2015, 2017; Li and Liu 2022; Lidón López et al. 2024; Yu et al. 2023; Zhang et al. 2024b). These inferences, in turn, mediate downstream outcomes such as product liking, WTP, and purchase intention. Similar inference

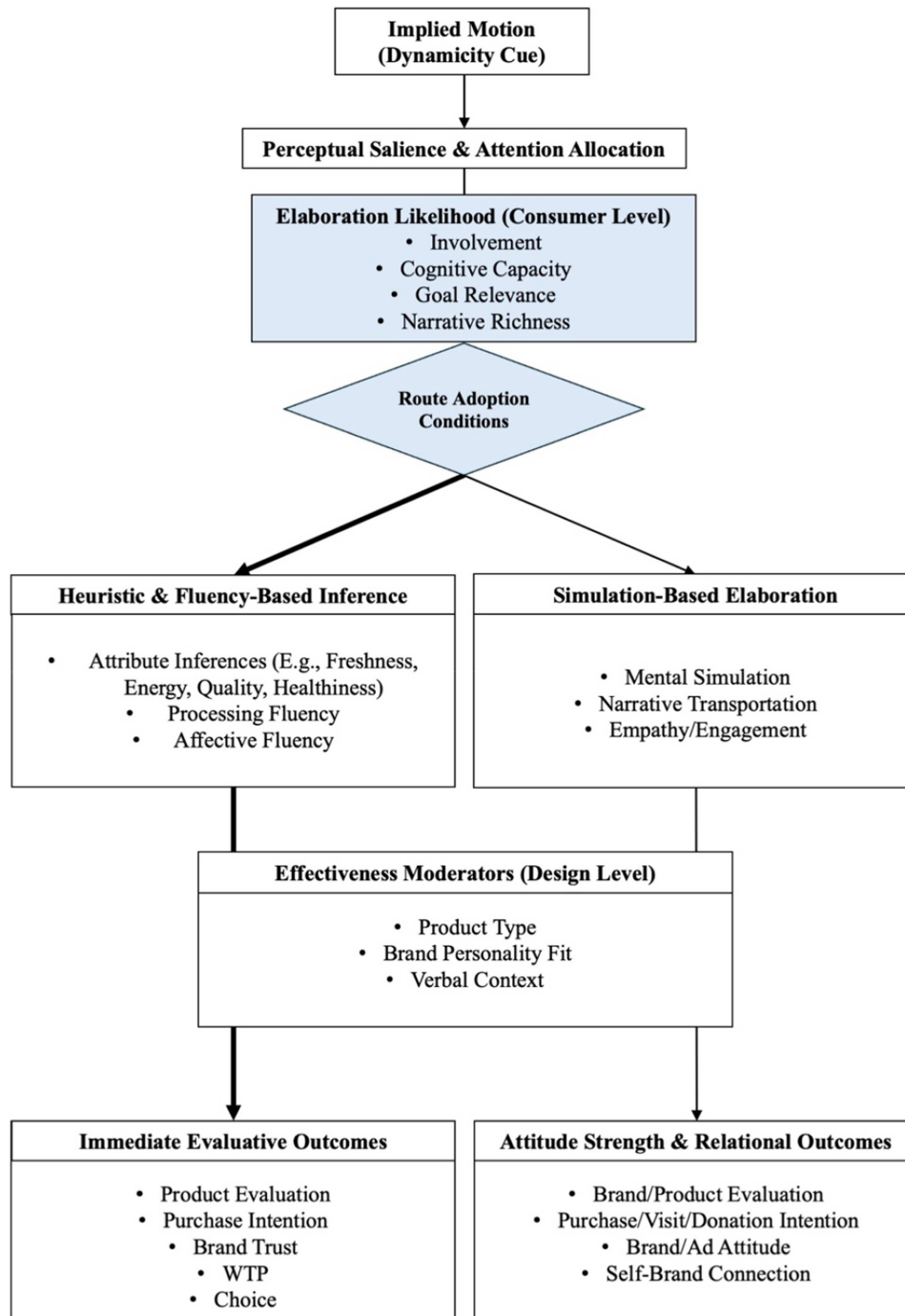


FIGURE 2 | A stage-based dual-route model of implied motion persuasion. Thicker lines represent pathways supported by a greater number of empirical findings.

patterns emerge in non-food contexts. For instance, Van Rompay et al. (2014) demonstrated that downward motion cues on detergent packaging enhanced perceived scent intensity. Similarly, implied explosion cues heightened both the perceived intensity and persistence of perfume (Droulers et al. 2024). Beyond specific products, dynamic logos have been shown to be associated with concepts such as quality, brand activity, and even freshness (Gong et al. 2025; Wang et al. 2023).

An unresolved theoretical question is whether these diverse attribute inferences associated with implied motion reflect the activation of a single, latent construct. To date, studies have

examined discrete concepts in isolation. Identifying a unifying construct would eliminate the need to test nuanced attribute-level mediators and would instead situate implied motion within a more unified semantic framework. Though not yet explicitly tested, the accumulated evidence tends to suggest that visual motion cues may consistently activate a cluster of concepts centred on sensory intensity and product efficacy. Indeed, the use of motion cues is prevalent in product categories that foreground effectiveness, such as energy drinks and health shots (see Figure 3a). Consistent with this, implied motion in menu imagery has been shown to make food items appear



FIGURE 3 | (A) Floating items on the Rheal Superfoods webpage; (B) pouring liquid chocolate depicted on Lindt packaging.

higher in energy content, particularly for energy-dense products (Du and Wang 2024; see Figure 3b for a marketplace example). Notably, analogous effects have been documented for colour saturation, which signals product efficacy and potency and influences both pre- and post-purchase perceptions (Labrecque et al. 2025), and it would be a promising research direction to examine whether people consistently associate implied motion cues with similar concepts.

3.2.2 | Fluency Heuristic

In addition to attribute inference, some studies document processing fluency, the subjective ease with which a stimulus is processed, as a peripheral mechanism. When multiple options are recognised and recognition alone cannot discriminate among them, the fluency heuristic operates such that the option processed more rapidly is inferred to hold greater value (Schooler and Hertwig 2005). Li and Liu (2022) suggested that dynamic (vs. static) food advertisements enhanced perceived tastiness through affective fluency, meaning the pleasant feelings associated with fluent processing. Monahan and Romero (2020) similarly found that left-to-right movement in advertisements produced a “feels-right” sense of fluency that increased brand trust, an effect attributable to the alignment between motion direction and the left-to-right reading conventions of Western consumers. More broadly, motion direction may need to align with culturally dominant reading habits (e.g., left-to-right in Western cultures) to generate a “feels-right” sense of fluency.

Theoretically, fluency is understood to arise from prior exposure and the progressive sense that one is successfully comprehending a stimulus (Landwehr and Eckmann 2020). In this sense, implied motion can be understood as additional perceptual information embedded within static presentations, and if that information facilitates the understanding of the product or brand, customers should experience greater fluency, and consequently, have more favourable evaluations. Together, the evidence on conceptual inference and fluency-based processing indicates that implied motion frequently functions as a peripheral cue, shaping immediate evaluative judgments requiring relatively low cognitive involvement.

3.2.3 | Boundary Conditions Within the Peripheral Route

Although peripheral-route effects are broadly robust, they are dependent on boundary conditions. Product type consistently

moderates outcomes. For hedonic products, dynamicity cues often enhance perceived quality and desirability (Wang et al. 2023; Zhang et al. 2024b). However, for utilitarian products, high dynamism can sometimes reduce purchase intention, particularly when it conflicts with expectations of functional reliability (Wang et al. 2023). Consumers' active consumption goals represent a further boundary condition. When a consumption goal is salient, such as seeking healthy food or indulgence, implied motion cues that are congruent with that goal are more likely to trigger goal-relevant attribute inferences (Du and Wang 2024; Li and Liu 2022), amplifying the peripheral-route effect. Inferential effects are also attenuated when explicit diagnostic information is available. When nutritional facts, freshness claims, or other directly relevant cues are made salient, the incremental persuasive value of motion-based inference diminishes (Du and Wang 2024; Gong et al. 2025). This pattern strongly supports the heuristic account: implied motion functions as a low-effort inferential shortcut primarily when diagnostic information is absent or less accessible.

Evidence of null effects further clarifies the conditions under which peripheral processing operates. Mulier et al. (2021) found no significant overall differences between motion and static conditions in terms of appeal, tastiness, healthiness, freshness, and anticipated pleasure. Importantly, their design exposed participants to 12–26 images across three experiments, asking them to evaluate each product sequentially. When effects were aggregated across a large and varied stimulus set, encompassing liquid pouring, sauce dripping, particle sprinkling, and food falling, the motion effect disappeared. Two explanations may account for this pattern. First, heuristic inference requires a meaningful and coherent conceptual mapping between movement type and product attribute, and some of the stimuli may not have satisfied such mappings. Second, repeated exposure to the same perceptual tactic across successive trials may erode the attentional foundation on which peripheral processing depends, such that the salience advantage of implied motion is diminished through habituation. Disentangling these accounts will require studies that incorporate both attentional measures and inferential outcomes within the same design.

3.3 | Stage 2B: Central Simulation-Based Elaboration Route

When consumers possess sufficient motivation, cognitive capacity, or narrative context to engage more deeply with visual stimuli, dynamic imagery appears to stimulate simulation-based processing that extends beyond rapid attribute inference. The studies reviewed here collectively identify three mechanisms through which the central elaboration route operates: mental simulation, narrative transportation, and empathic engagement.

Before going into the reviewed findings, it is useful to distinguish four related but conceptually distinct constructs that have been examined across these studies. Mental imagery refers to the formation of a sensory-like internal representation of a product or scene, whereas mental simulation refers to the dynamic cognitive enactment of an event or action sequence unfolding over time. Because implied motion inherently depicts action rather than a static state, mental simulation is the more precise construct and is used as such throughout this review. Additionally, engagement and empathy both denote a state of

sustained cognitive and affective investment in a stimulus, while empathy involves the affective resonance toward the depicted agent. Engagement and empathy act as complementary elaborative mechanisms in the studies reviewed.

3.3.1 | *Mental Simulation*

Several studies demonstrate that implied motion enhances product and brand evaluations through mental simulation, the cognitive process of mentally enacting or imagining depicted actions and their consequences (Hegarty 2004). Critically, this mechanism tends to emerge when motion cues are embedded within rich contextual or narrative settings, such as social media posts, email promotions, or advertisements with descriptive verbal framing (Bünzli et al. 2025; Farace et al. 2020; Grigsby et al. 2023; Lim and Childs 2020; Mead et al. 2020; Xiong et al. 2023). In such contexts, narrative elements serve as prompts that encourage consumers to mentally enact the depicted scene, increasing elaboration likelihood and deepening engagement with the motion cues. This assumption is consistent with the evidence that explicit imagination instructions amplify the persuasive effects of imagery appeals (Petrova and Cialdini 2005).

Mental simulation also underlies the persuasive effects of motion cues in travel contexts. Li and Ma (2024) found that implied motion in travel photographs increased visit intention by activating mental imagery of the travel experience. Notably, this effect was weakened when verbal motion cues were simultaneously present, suggesting that explicit linguistic descriptions of movement may partially substitute for the role of visual motion cues in driving simulation-based elaboration.

3.3.2 | *Narrative Transportation, Empathy, and Engagement*

Beyond mental simulation of product use, implied motion can exert its persuasive impacts through narrative transportation and empathy, the elaborative mechanisms that tend to emerge when motion cues are embedded within contextually rich stimuli. In advertising contexts, Grigsby et al. (2023) showed that a higher level of depicted movement in print ads, especially those featuring humanised figures, increased empathy toward the depicted characters, which further activated imagination and narrative transportation, ultimately producing more favourable ad attitudes. This sequential mediation pathway posits that motion first generates an affective resonance with the depicted agent, which then motivates deeper imaginative engagement with the narrative, positioning empathy as the entry point into central-route elaboration rather than a downstream outcome. In social media contexts, Lim and Childs (2020) found that implied motion in Instagram posts increased telepresence and narrative transportation, which strengthened self-brand connection. Bünzli et al. (2025) extended these findings by showing that more complex motion patterns in social media ads elicited greater engagement and, in turn, increased ad persuasiveness, visit intention, and donation intention. Notably, their study found no difference in engagement between depictions of humans, animals, and objects, suggesting that the elaborative benefits of implied motion do not depend on what is being depicted.

In the context of branding, implied motion embedded in logos and static brand designs fosters engagement and strengthens brand attitudes through meaning construction. Logos containing implied motion increased engagement and positive brand evaluations, particularly when the direction of motion metaphorically matched the brand's positioning (Cian et al. 2014; Tang et al. 2025). Motion toward the right is commonly associated with the future and modernity, whereas motion toward the left evokes the past (Chae and Hoegg 2013; Cian et al. 2014; Tang et al. 2025). A well-known real-world illustration of logo motion direction is the Johnnie Walker logo: the original "Striding Man" faced right-to-left, aligning with the brand's "Fine Old Scotch Whisky" positioning by orienting the figure toward the past. When the brand was repositioned around progress and a forward-looking identity in 2000, the figure was reversed to face left-to-right. Together, these cases indicate that the persuasive value of motion direction is not fixed but depends on the fit between directional semantics and brand personality.

3.3.3 | *Boundary Conditions Within the Central Route*

Across studies, three conditions appear to facilitate central-route processing of implied motion: higher consumer involvement or goal relevance (e.g., promotion deal relevance; Mead et al. 2020), narrative richness (Lim and Childs 2020), and visual-verbal congruency that encourages integrative interpretation (Cian et al. 2014; Farace et al. 2020; Tang et al. 2025). Note that most studies included in this section have included verbal contexts illustrating the ad context or explaining the brand's positioning, which may have contributed to consumers engaging more actively with the implied motion. Importantly, central-route processing does not necessarily imply stronger attitudinal or behavioural outcomes based on the findings reviewed. Rather, it is more consistently associated with outcomes related to attitude strength and relational engagement, including brand engagement, self-brand connection, ad and brand attitude, visit and donation intentions, which are more integrated and potentially more durable evaluative responses.

3.4 | **Stage 3: Attitudinal and Intentional Outcomes Focused Studies**

A small number of studies have examined the attitudinal and intentional outcomes of implied motion without explicitly testing the underlying processes. Liu and Li (2024) showed that high image dynamism combined with a high level of surrounding white space increased ad attitude toward car advertisements, suggesting that the visual context in which motion is embedded meaningfully shapes its evaluative impact. Boman et al. (2026) examined motion cues in a service recovery context, finding that low dynamism in recovery message emojis increased brand loyalty, brand trust, and WTP, but only when the recovery strategy involved an apology rather than compensation. While these studies do not advance mechanistic understanding, they provide direct evidence that implied motion can effectively shape ad attitudes and brand-level responses under specific conditions. The potential moderating conditions are further elaborated in section 3.5.

3.5 | Moderators of Perception Persuasion with Visual Implied Motion

The persuasive effects of implied motion depend on a range of moderating conditions that determine both the information processing route and its effectiveness. This section is organized into two parts: consumer-side moderators and marketing design-side moderators.

3.5.1 | Consumer-Side Moderators

In addition to the cognitive load of consumers discussed in Stage 2, two additional consumer-side factors moderate the effects of implied motion: consumption goals and individual preferences. Consumption goals determine whether consumers are actively motivated to process the information and which attributes consumers pay attention to. Implied motion enhanced evaluations of healthy foods among health-goal-oriented consumers (Li and Liu 2022) and enhanced evaluations of hedonic foods among those with hedonic goals (Du and Wang 2024). Relevant here, Mead et al. (2020) offer a complementary illustration by showing that right-slanted typography, which is associated with “moving forward in time”, exerted stronger effects on click-through among deal-prone consumers, for whom the promotional goal was more personally salient.

Individual preferences also moderate implied motion effects. Xiong et al. (2023) found that when consumers already disliked a food product, adding implied motion reduced rather than enhanced expected tastiness. This finding suggests that implied motion most likely amplifies pre-existing evaluative tendencies rather than overriding them and therefore requires caution in its application.

3.5.2 | Design-Side Moderators

Several design-level factors moderate the effectiveness of implied motion, including the spatial properties of the motion cue, and the fit between motion and product or brand characteristics. The direction and placement of implied motion in visual ads can moderate the effectiveness of this visual cue on product evaluation. Downward motion positioned in the top-left of packaging enhanced perceived scent intensity, while upward motion improved overall package evaluation (Van Rompay et al. 2014). The level of white space in the visual field also matters. Implied motion is evaluated more favourably when there is a significant amount of white space (Liu and Li 2024). This may be because the visual simplicity allows the motion cues to attract perceptual attention more effectively.

The effectiveness of implied motion depends on the perceived fit between the motion cue and the inherent attributes of the product or brand. Motion direction carries semantic associations that interact with product and brand personality (Cian et al. 2014; Monahan and Romero 2020; Tang et al. 2025). It is equally important that implied motion fits the usage context. Dynamism should align with the image the brand wishes to project (Boman et al. 2026). Implied motion also seems to work differently with utilitarian and hedonic product categories (Wang et al. 2023; Zhang et al. 2020; Zhang et al. 2024a, b), though the boundary conditions of this distinction remain insufficiently understood and warrant further investigation. In real-world marketing cases, successful logo designs illustrate



FIGURE 4 | Brand logos with implied motion.

what effective brand–motion fit looks like in practice: the TikTok dancing music note, the FedEx hidden arrow, and the widespread use of motion symbolism in sports branding all demonstrate how implied motion can efficiently communicate abstract brand meaning when aligned with brand identity (Figure 4; Salgado-Montejo et al. 2014).

3.6 | Beyond Implied Motion: Dynamism as a Marketing Design Tactic

Beyond visual imagery, implied motion can manifest through language when words or phrases symbolically encode movement. Yu et al. (2023) showed that “exploding” dish names significantly increased perceived taste intensity and product liking compared with static descriptors, suggesting that language-evoked motion works analogously to visual motion cues. Similarly, Droulers et al. (2024) found that perfume slogans with “explosion” meaning enhanced olfactory intensity expectation. The persuasive potential of motion language in product communication was recognised decades earlier (Nelson and Hitchon 1995, 1999), and contemporary marketing practice has embraced it widely: perfume brands adopt names such as “Cherry Bomb” and “Spice Bomb”, food products are described as “explosive in the mouth”, and terms like “popping boba” and “popping candy” transform sensory descriptions into multisensory imagery that invites consumers to imaginatively simulate the product experience. These examples reflect the broader principle that motion metaphors activate embodied semantic associations that amplify perceived product intensity (Barsalou 1999; Bolognesi and Strik Lievers 2018; Glenberg and Kaschak 2002). The relative persuasive weight of verbal versus visual implied motion cues has not yet been established.

Dynamic cues need not be visual or verbal. Panning audio that is presented alongside static images can be another form of dynamic cues (Mourey and Elder 2019). In this study, audio panning from centre-to-left or centre-to-right increased purchase intentions for pain-relief medications compared with static audio, mediated by heightened arousal, which is also an indicator of heightened attention. However, future empirical research will be needed to further understand this form of dynamism.

Several studies have examined real rather than implied motion in the context of marketing, including animations, GIFs, and moving logos (Brasel and Hagtvedt 2016; Guido et al. 2016; Roggeveen et al. 2015; Peng et al. 2023; Toet et al. 2019). Such dynamic presentation formats are found to evoke stronger preferential responses in consumers. As Sample, Hagtvedt, and Brasel (2020) note, the proliferation of digital screens has made visual animation common in marketing communication. Dynamic logos and motion-based promotional content are

now standard features of the digital marketing landscape, yet theoretical investigation of their persuasive mechanisms lags behind marketplace practice. Understanding how the principles identified in the implied motion literature generalise to real motion contexts represents an important frontier for future research.

4 | Discussion

4.1 | Theoretical Contributions

This systematic review advances understanding of implied motion in marketing by moving beyond isolated effect demonstrations toward an integrative theoretical account. By organising 31 experimental studies within the Elaboration Likelihood Model, the dual-route framework proposed here resolves a longstanding fragmentation in the literature: prior work has variously attributed implied motion effects to fluency, mental simulation, attribute inference, and narrative transportation without specifying the conditions under which each mechanism operates. The framework clarifies that these are not competing explanations, but complementary processes activated under different elaboration conditions. This integration has broader implications for persuasion research, suggesting that perceptual cues embedded in visual stimuli can engage the full range of processing routes previously studied primarily in the context of verbal and message-based persuasion.

The review also contributes to neuromarketing and consumer neuroscience by documenting convergent behavioural and neurophysiological evidence that static depictions of movement activate motion-processing neural circuits and modulate attentional ERP components (Li et al. 2019; Peng et al. 2023). This alignment between neural and behavioural findings in marketing research strengthens the theoretical account that implied motion effects are grounded in fundamental perceptual mechanisms rather than solely in higher-order cognitive constructs. Indeed, the perceptual reality of implied motion is perhaps most vividly illustrated by Akiyoshi Kitaoka's rotating snake illusions, where static images produce such compelling motion perception that viewers experience them as genuinely moving (Kitaoka and Ashida 2003). Together, this review shows how the psychological mechanisms of marketing research questions can be further solidified by neuroimaging methods, which could profitably be extended to other marketing contexts to examine how marketing attempts shape early-stage consumer perception (Lee et al. 2007; Morin 2011; Spence 2020).

4.2 | Practical Implications

The dual-route framework offers actionable guidance for marketing practitioners. When the goal is to drive immediate evaluative responses, such as purchase intention or WTP, implied motion is most effective when diagnostic verbal information is minimal, and the motion cue is congruent with the product's core attributes. Consumers with consumption goals aligned with the inferred attribute are also more likely to be positively influenced by the implied motion tactic. When the goal is to build brand relationships or

strengthen attitudinal commitment, implied motion should be embedded within narrative-rich contexts that facilitate mental simulation, engagement, and even narrative transportation. Motion direction should also be carefully designed to align with brand personality. This review also highlights the risks of indiscriminate application. Implied motion can backfire when applied to disliked products and lose its persuasive value when surrounded by competing verbal information. Practitioners should therefore treat implied motion as a context-sensitive design tool rather than a universally effective visual tactic.

4.3 | Future Research Directions

Several important questions remain unresolved and warrant future investigation. The reviewed studies document a wide range of attribute inferences triggered by implied motion (e.g., freshness, energy, intensity, quality, potency), but no study has examined whether these reflect a single latent construct. Identifying such a construct would provide a more parsimonious account of peripheral-route effects and generate clearer predictions about which product categories and motion types are most likely to produce inferential benefits.

The relative persuasive contribution of verbal versus visual motion cues remains unresearched. Evidence suggests that verbal motion cues can substitute for visual ones (Li and Ma 2024) and that combined verbal-visual congruency amplifies effects (Farace et al. 2020), yet the conditions under which the two modalities facilitate or interfere with each other's processing remain unclear. Given that most real-world marketing designs deploy verbal and visual cues simultaneously, understanding whether their combined effects are additive, redundant, or synergistic represents a practically important and theoretically unresolved question toward understanding consumer information processing.

Most reviewed studies drew on WEIRD samples (Henrich et al. 2010). Several moderating variables discussed, including motion direction effects tied to reading habits and attribute inferences tied to culturally specific food preferences, are plausibly culture-dependent (Motoki and Iseki 2022; Spence and Youssef 2022; Xiong et al. 2023). Future research should therefore examine whether the semantic associations linking motion cues to product attributes are universal or culturally constructed. Studies using broader product sets and more culturally diverse samples would also address the external validity concerns raised by the predominance of single-product designs in the current literature (as criticized by Mulier et al. 2021).

The implied motion literature has focused predominantly on static stimuli, yet the digital marketing landscape increasingly features animations, GIFs, augmented reality overlays, and interactive motion-based experiences. Whether the mechanisms identified here generalise to real motion in digital environments, or whether additional processes are engaged, remains an open question. Emerging formats such as AR packaging that overlays digital motion onto physical products and interactive billboard campaigns that make consumers active participants in the motion experience represent promising contexts for extending this research agenda (Fear 2023; Fritz et al. 2023; Petit et al. 2019).

5 | Conclusions

This review set out to answer a deceptively simple question: when and why does depicting movement in a static image persuade? Through organising experimental findings within the Elaboration Likelihood Model, the dual-route framework provides a theoretically grounded answer. Implied motion first captures attention by enhancing perceptual salience. From there, its influence diverges depending on the elaboration context: under low cognitive engagement, it acts as a peripheral heuristic cue, triggering rapid attribute inferences and fluency-based affect; under richer narrative conditions, it activates mental simulation, empathy, and narrative transportation, producing deeper and more relational evaluative responses. The framework highlights several underexplored questions, including the existence of a unifying construct underlying motion-based attribute inference, the comparative persuasive weight of verbal versus visual motion cues, and the generalisability of implied motion effects to real motion in digital environments.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Web Appendix A: The review procedure (PRISMA).

Web Appendix B: Experimental evidence on implied motion ($N = 31$) organized by elaboration likelihood model stages.