

Singapore Management University

Institutional Knowledge at Singapore Management University

Research Collection Lee Kong Chian School Of
Business

Lee Kong Chian School of Business

11-2015

How kinetic property shapes novelty perceptions

Junghan KIM

Singapore Management University, junghankim@smu.edu.sg

Arun LAKSHMANAN

State University of New York at Buffalo

Follow this and additional works at: https://ink.library.smu.edu.sg/lkcsb_research



Part of the [Marketing Commons](#), and the [Technology and Innovation Commons](#)

Citation

KIM, Junghan and LAKSHMANAN, Arun. How kinetic property shapes novelty perceptions. (2015). *Journal of Marketing*. 79, (6), 94-111.

Available at: https://ink.library.smu.edu.sg/lkcsb_research/5318

This Journal Article is brought to you for free and open access by the Lee Kong Chian School of Business at Institutional Knowledge at Singapore Management University. It has been accepted for inclusion in Research Collection Lee Kong Chian School Of Business by an authorized administrator of Institutional Knowledge at Singapore Management University. For more information, please email cherylds@smu.edu.sg.

Junghan Kim & Arun Lakshmanan

How Kinetic Property Shapes Novelty Perceptions

This article demonstrates a new substantive finding: that kinetic property in advertising, defined as direction changes in the paths of moving on-screen ad elements, enhances consumer judgments of product novelty. Across six studies, the authors first outline an inference-based theory as to why the novelty-enhancing effect of kinetic property manifests: kinetic property generates impressions of how visually lively an ad is, which leads to inferences of product atypicality and, consequently, higher novelty judgments. Second, they demonstrate boundary conditions by showing that (1) the positive effect for kinetic property is evident with incremental (and not radical) innovations, (2) the effect dissipates when figure-ground contrast in the ad makes kinetic property less discriminable, (3) contextual adaptation to kinetic property can mitigate this effect, and (4) kinetic property enhances novelty judgments primarily when product category characteristics such as perceived market dynamism match with kinetic property-based executions. The authors offer substantive implications for firms marketing new products as well as for multimedia advertising.

Keywords: novelty, kinetic, new product, online, inference

Online Supplement: <http://dx.doi.org/10.1509/jm.14.0284>

Product novelty is a critical determinant of marketplace success. Products perceived as new are adopted faster, show better sales and profits (Gourville 2006; Mukherjee and Hoyer 2001), and lead to stronger firm performance (Sorescu, Chandy, and Prabhu 2003; Sorescu and Spanjol 2008). Prior research has identified product-related aspects such as technology, functionality, features/attributes, or design (Chandy and Tellis 1998; Hoeffler 2003; Mugge and Dahl 2013; Mukherjee and Hoyer 2001) as well as contextual and non-product-related factors such as framing or categorization (Moreau, Markman, and Lehmann 2001; Ziamou and Ratneshwar 2003) as antecedents to consumer judgments of novelty.

Within the latter stream of literature, emerging research has examined the role of physical, often visually processed, properties of marketing communication (e.g., Pieters, Wedel, and Batra 2010). Recent work has shown how properties such as angle of ad pictures, incompleteness of typeface logos, and package shapes drive perceptions of the target product or brand (Folkes and Matta 2004; Hagtvedt 2011; Peracchio and Meyers-Levy 2005). However, little is known about how dynamic elements in multimedia advertisements shape consumer perceptions. This gap is noteworthy given that dynamic ad elements such as motion graphics, kinetic typography, and infographics have become increasingly popular in the current multimedia environment.

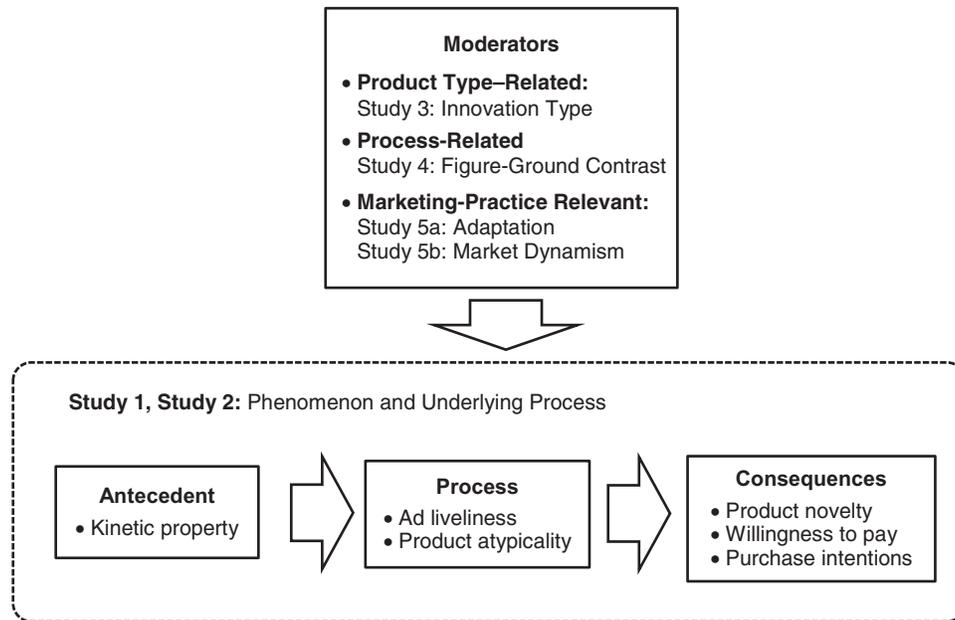
As the multimedia environment has become more varied and newer technologies such as Javascript and Flash have developed, advertisers are now able to generate animated content easily and cheaply (Krasner 2008). One example that reflects the surge in popularity of animated ads is web page advertising that utilizes motion elements. Recent reports have shown that such rich media advertising garnered revenues of more than \$1.3 billion in 2013 (Interactive Advertising Bureau 2014, p. 13). Furthermore, recent practitioner surveys have also indicated that an increasing number of marketers choose dynamic content as their preferred marketing tactic on account of its cost effectiveness (eMarketer 2013). Although anecdotal evidence is plentiful, little systematic research has either explored why animations in ads may be effective or ineffective or outlined conditions circumscribing these expectations (for an exception, see Goldstein et al. 2014).

In the current research, we introduce kinetic property of motion as a key determinant that shapes consumers' novelty perceptions. By "kinetic property," we refer to changes in direction embedded in moving ad elements (such as a focal product's image) within an online advertisement. We argue that kinetic property generates stronger impressions of the ad being visually lively; we define this visual impression as ad liveliness. This low-level visual impression leads to higher-level inferences pertaining to how atypical the advertised product is, which in turn enhances consumers' novelty perceptions. This inferential process is moderated by product-related factors such as innovation type and market dynamism, contextual factors such as adaptation, and theoretical factors such as figure-ground contrast (Wagemans et al. 2012). Figure 1 provides an overview of our conceptual model.

We base our proposition on insights from psychophysics and vision research. In the psychophysics literature, novelty is conceptualized as being determined by perceptual reactions to physical stimulus properties (Berlyne and Parham 1968;

Junghan Kim is a doctoral candidate in Marketing, School of Management, State University of New York at Buffalo (e-mail: junghank@buffalo.edu). Arun Lakshmanan is Assistant Professor of Marketing, School of Management, State University of New York at Buffalo (e-mail: alakshma@buffalo.edu). The authors thank Amitav Chakravarti, Shanker Krishnan, and the *JM* review team for their valuable feedback on earlier versions of this article. Ajay Kohli served as area editor for the initial rounds of the review process, and Robert Meyer served as area editor for the remainder of the editorial process.

FIGURE 1
Conceptual Overview



Cupchik and Berlyne 1979; Gati and Ben-Shakhar 1990; Rauschenberger 2003). Such physical properties can vary across contexts and, in the case of kinetic property in particular, can affect high-level social/cognitive inferences (e.g., Scholl and Gao 2013; Scholl and Tremoulet 2000). Because motion is a fundamental characteristic of animated ads, the way consumers process it can have profound consequences on their cognitions and inferences about products.

We build on this intuition and present six studies that empirically investigate our core proposition that kinetic property enhances novelty judgments. First, we demonstrate the novelty-enhancing effect of kinetic property and outline its underlying process (Studies 1 and 2). Second, we demonstrate how kinetic property differentially affects consumers' novelty-related inferences depending on the type of innovation (incremental vs. radical; Study 3). Third, we delineate how figure-ground contrast, a theoretically relevant factor, moderates this effect (Study 4). Fourth, we show that the novelty-enhancing effect of kinetic property may be mitigated when consumers are repeatedly exposed to similar animated ads (i.e., moderation by adaptation; Study 5a). Finally, we find that the effect of kinetic property occurs when product category characteristics such as market dynamism match high kinetic property ads but does not hold when they do not match (Study 5b). We also document the effect of kinetic property on downstream outcomes such as willingness to pay (WTP; Study 5a) and purchase intentions (Study 5b) across two product categories.

Our research makes both theoretical and managerial contributions. Broadly, we contribute to the literature exploring the impact of visual properties of communication methods (Cian, Krishna, and Elder 2014; Hagtvædt 2011; Peracchio and Meyers-Levy 2005) by (1) expanding the domain of inquiry from static to dynamic elements and (2) uncovering a specific

property of dynamic elements—kinetic property—that explains their differential effects. More importantly, we add to the nascent literature on dynamic media content, whose focus has hitherto been on the attention-getting effects of such content in the context of television commercials (Brasel and Gips 2008) or the downside of animations in online banner ads (as peripheral on-screen stimuli) in distracting users (Goldstein et al. 2014). We extend this emerging literature by providing theoretical insights into when and how kinetic property in animated ads leads consumers to make product-related *inferences*.

From a managerial standpoint, although dynamic ad elements are widely used in the field, little systematic knowledge exists surrounding their usage. Moreover, previous literature has primarily documented negative effects of animations (e.g., Goldstein et al. 2014; Yoo and Kim 2005). Departing from this perspective, we formally examine when and how animations can work as an effective marketing communication tactic. To this end, we identify kinetic property as a managerially actionable, advertisement-design-related variable and also outline limits to the effective use of kinetic property in online advertising. Key managerial takeaways include the implication that, using kinetic property, marketers can enhance consumers' novelty-related inferences without imposing significant perceptual/cognitive load. Overall, this research aims to better develop our understanding of how digital technologies shape consumer behavior in multimedia-rich environments (Marketing Science Institute 2014).

Theoretical Development

Perceptual Determinants of Novelty

Prior evidence from psychophysics has suggested that the perceived novelty of a stimulus may not be constrained by its

inherent characteristics but could also be driven by contextual variations. For example, a given stimulus element such as an irregular geometric shape is perceived as more novel when its color or shape distinguishes it from other nearby elements (Berlyne and Parham 1968; Cupchik and Berlyne 1979). Similarly, Gati and Ben-Shakhar (1990) show that even repeatedly presented shapes are perceived as novel when contextual characteristics such as viewing angle, viewing distance, or lighting are varied. Along the same lines, Rauschenberger (2003) finds that existing objects are judged as new when their luminance is contextually varied. Thus, variations in how a product is visually presented in multimedia advertisements can determine how novel it is judged to be.

Similar notions have been explored within marketing as well, wherein visual properties in static ads (e.g., camera angles, orientations) have been shown to affect advertising persuasiveness (Peracchio and Meyers-Levy 2005). Similarly, research has shown visual characteristics of product- or brand-related stimuli such as logos to affect higher-level cognitions (Hagtvedt 2011). However, little is known about how dynamic ads (i.e., ads containing moving elements) affect consumer perceptions. This question forms our focus.

Imagine a web ad containing an image of a product moving across the screen. This ad does not use spokespeople or animated characters. The primary visual cues available to consumers are the product's image and its on-screen motion path. Drawing on the discussion of stimulus novelty, the movement of this image across the screen should provide inferential cues that can shape higher-level cognitions. Prior vision research also supports this conjecture by documenting how on-screen motion can shape higher-level judgments and inferences (Scholl and Gao 2013; Scholl and Tremoulet 2000).

Kinetic Property of Motion

We define kinetic property of motion as direction changes embedded in the motion trajectories of on-screen images. This definition draws on previous work in the vision and motion perception literature streams (e.g., Tremoulet and Feldman 2000), and we focus on the role of kinetic property in shaping higher-level judgments related to visual stimuli.

Previous research has documented that trajectory direction change is a motion-related property that leads visual stimuli to be perceived as being lively and to drive higher-level inferences. For example, Bassili (1976) shows that when a simple on-screen geometric object (e.g., a circle) is programmed on a path converging toward another object, it generates impressions of "chasing" the latter. Furthermore, if the second object independently moves "away," viewers judge the two objects as interacting with each other and as exhibiting high-level social behavior such as approach or avoidance. Similarly, Dittrich and Lea (1994) show that direction changes embedded in the motion paths of an on-screen two-dimensional object can generate inferences of goal directedness. When the direction changes were designed to convey a focal object avoiding or approaching obstacles or gateways, participants judged the object as being goal directed (even though viewers were aware that the object is inanimate). More notably, and germane to our work, when the path of a moving on-screen object involved

ostensibly spontaneous changes in direction, the object was perceived as being alive (Santos et al. 2008). As such, direction changes embedded in the motion trajectory of visual elements can shape visual liveliness because such a property is ordinarily exclusive to independent agents who can control their movement without relying on external forces (Tremoulet and Feldman 2000). This stream of literature has termed these visual perception-related phenomena as "perceptual animacy" (e.g., Scholl and Gao 2013) and has commonly suggested that it can be formed primarily by how on-screen objects move.

We draw on the previous discussion to posit that the presence of kinetic property in ads should generate stronger impressions of ad liveliness. That is, when an advertisement is designed with on-screen images that change direction while moving, such motion would signal animacy cues, and thus, the advertisement overall should appear visually lively. Compared with ads with kinetic property, a similar ad that contains the same on-screen images that are moving without direction changes should not generate such liveliness impressions. This is because, in the latter case, the moving images do not signal any animacy cues. This difference should matter because prior research has shown that consumers often instantaneously infer product-related judgments from ad visuals (e.g., Peracchio and Meyers-Levy 2005).

Similar to previous work in visual perception, the product image in the advertisement is also an inanimate object. Inanimate objects, by definition, should not be able to change direction of their own accord (even if they possess some momentum that keeps them "moving"). Thus, when a moving product image is embedded with kinetic property, not only does it make the advertisement visually lively, but the enhanced visual liveliness leads the product to stand out as atypical. Prior research on categorization has shown that atypicality increases to the extent that a category member (in our case, an inanimate product) has attributes (such as direction changes) that are distinct from other members (Loken and Ward 1990; Tversky 1977). Therefore, we expect that consumers draw greater inferences about product atypicality from ads that contain kinetic property compared with animated ads that do not contain kinetic property.

Finally, we argue that product atypicality inferences will lead to enhanced novelty judgments.¹ Prior categorization literature has also supported the link between atypicality and novelty. For example, when an atypical product offers a new functionality, consumers are more likely to perceive the new

¹Although product atypicality and novelty are similar constructs, prior work has suggested that a product of a category could be viewed as more or less novel than another without being judged as atypical of the category in question (Hekkert, Snelders, and Wieringen 2003). Thus, we believe that atypicality and novelty are not the same, though they share the same nomological network. However, we also empirically examine this issue by testing for discriminant validity between the two constructs. A confirmatory factor analysis using data pooled across multiple studies ($N = 883$) revealed support for discriminant validity ($\Delta\chi^2(1) = 4.67, p < .05$; Anderson and Gerbing 1988). A stronger and more conservative test suggested by Fornell and Larcker (1981) also confirmed discriminant validity: average variances extracted for atypicality (.84) and novelty (.66) were higher than the squared correlation between the two constructs (.53).

functionality as truly new (Ziamou and Ratneshwar 2003). Similarly, a furniture piece's design is perceived as novel when it has atypical attributes relative to other furniture (Whitfield and Slatter 1979). Accordingly, when consumers infer an advertised product as atypical, their atypicality inferences should drive greater novelty judgments. Recapitulating the preceding discussion, we hypothesize the following:

H_{1a}: The focal product is perceived as more novel after exposure to the high (vs. low) kinetic property ad.

H_{1b}: The effect of kinetic property on novelty judgments is serially (and positively) mediated by ad liveliness and product atypicality, respectively.

It is important to note that “ad liveliness” refers to perceptions of the focal ad appearing lively in a visual sense (e.g., alive with color, alive with movement) but does not imply that the focal ad is literally/biologically alive (and thus could be killed or made dead). Furthermore, we focus on perceptions of ad liveliness rather than liveliness of specific on-screen images because previous research has shown that holistic processing predominates over component-level processing when it comes to visual perceptions (e.g., Navon 1977). Prior marketing literature has also documented that consumers' sensory experience of visuals often tends to come from holistic impressions of all elements together rather than a bottom-up processing of individual elements (Orth and Malkewitz 2008). This idea is also mirrored in the broader literature on ad processing (e.g., Meyers-Levy 1989) as well as related areas such as preconscious processing (e.g., Janiszewski 1988) and embodied cognition (e.g., Chae and Hoegg 2013).

Overview of Experimental Paradigm

The basic experimental paradigm involved showing participants a web-based multimedia advertisement that introduced a fictitious new product followed by a survey containing dependent measures and covariates (for details on scale items, see Appendix A). We manipulated kinetic property by varying motion trajectories of the visual elements in the ad. In the high kinetic property ad, images and informative text about the product appeared sequentially on-screen such that there were multiple points of direction change in their respective motion trajectories. In the low kinetic property ad, the same images appeared in the ad sequentially without direction changes (path trajectories remained unchanged from point of entry to point of rest). Unless otherwise noted, all other ad elements were identical (see Appendix B, Panel A).

Study 1: The Novelty-Enhancing Effect of Kinetic Property

Our main focus at this point is in isolating the role of kinetic property and explicating how it influences consumers' novelty-related inferences. Thus, we include two ads that contain moving elements: one possessing a change in direction (high kinetic property) and the other without it (low kinetic property). In this way, we can clearly pinpoint the role of kinetic property of motion and not conflate it with the presence or

absence of motion itself. However, we also include a static ad as a comparison to the two kinetic property ads to better shed light on (1) how dynamic ads (ads with movement) compare with static ads and (2) whether kinetic property has unique consequences within dynamic ads.² This question is also managerially relevant because prior research has documented some findings that dynamic ads may be less effective compared with static ads (Goldstein et al. 2014).

Stimuli, Design, and Procedure

Ninety-four undergraduate students (55% male) participated in a single-factor (kinetic property: high/low/static) between-subjects laboratory experiment in exchange for course credit. The high and low kinetic property stimuli were constructed as described in the previous section (see Appendix B, Panel A), while the static ad group saw a screen capture of the final frame (containing all relevant product details; see Appendix B, Panel B). Upon arrival, participants were randomly assigned to view one of three ads introducing a fictitious new smartphone. The focal smartphone was an incrementally new product (INP); product descriptions reflected it, and participant ratings confirmed the same (mean novelty rating in the static ad was below the midpoint of the scale; $M = 3.65$, $SD = 1.46$). After viewing the ad, participants rated its novelty ($\alpha = .80$). We also measured participants' attention to the ad ($\alpha = .84$) to test for differences in attention across dynamism (moving vs. static) and kinetic property (high vs. low).

Results and Discussion

A one-way analysis of variance (ANOVA) on novelty perceptions revealed a significant main effect for kinetic property ($F(2, 91) = 4.50$, $p < .02$). In support of H_{1a}, planned contrasts showed that perceived product novelty was greater in the high (vs. low) kinetic property ad ($M_{\text{high}} = 4.67$, $SD = 1.36$; $M_{\text{low}} = 3.86$, $SD = 1.42$; $t(91) = 2.25$, $p < .03$). In addition, participants exposed to the high kinetic property ad rated the product as more novel than did those exposed to the static ad ($M_{\text{static}} = 3.65$, $SD = 1.46$; $t(91) = 2.85$, $p < .01$). There were no differences in novelty perceptions between the low kinetic property and static ads ($t(91) = .62$, $p > .5$). Taken together, this pattern indicates that kinetic property, and not movement alone, predicts novelty judgments.

Moreover, while participants' attention to the ad was greater for both high and low kinetic property ads ($M_{\text{high}} = 5.40$, $SD = 1.17$; $M_{\text{low}} = 5.21$, $SD = 1.26$) compared with the static ad ($M_{\text{static}} = 4.23$, $SD = 1.25$; $ps < .01$), attention was not different between the two kinetic property ads ($p > .5$). Taken together, these findings imply that both the dynamic ads were more attention-getting compared with the static ad—a pattern to be expected because moving objects are preattended by the human visual system (McLeod, Driver, and Crisp 1988). Yet for motion to affect consumers' inferences regarding product novelty, merely catching attention is not enough. Moving ad elements should also contain kinetic property. Without kinetic property, a dynamic ad does not generate

²We thank Reviewer 2 for this recommendation.

visual liveliness, an important inferential cue for novelty-related judgments, and thus leaves novelty perceptions unchanged relative to static ads.

Prior research exploring animated ads has documented distraction as a major drawback of these ads because animations may interfere with viewers' cognitive processing of ad messages (Yoo and Kim 2005). The inclusion of the static ad condition also enabled us to explore whether kinetic property in the ad works as a distractor. The static ad group's evaluations of the focal product without animations of any kind provided the baseline novelty ratings. Furthermore, given that the baseline novelty ratings placed the focal product at the incrementally novel end of the new product continuum, the increase in perceived novelty due to kinetic property cannot be attributed to distraction on account of kinetic property.

That is, if the high kinetic property ad distracts consumers from processing attribute details, product novelty judgments should revert to the baseline (due to guessing or regression to the mean), whereas novelty judgments would remain at the baseline level with the low kinetic property ad. Thus, if distraction were in play, we should observe, at best, null effects or possibly negative effects of kinetic property. However, the pattern we observed was opposite to that predicted by the distraction account. To elaborate, novelty ratings in the high kinetic property ad were enhanced beyond the baseline ratings of the static control group, whereas this enhancement did not manifest in the low kinetic property ad.³ This finding implies that kinetic property actively serves to *enhance* perceived novelty. Why/how should it do so? To answer this question, we focus on the hypothesized inference-making process underlying the novelty-enhancing effect of kinetic property and empirically test it with mediation analyses in Study 2.

Study 2: The Process Underlying the Novelty-Enhancing Effect of Kinetic Property

We theorize that kinetic property enhances perceptions of ad liveliness from which consumers infer the focal product's atypicality, which in turn shapes their novelty judgments. In this study, we empirically test our process hypothesis: kinetic property → ad liveliness → product atypicality → product novelty. In addition, we also outline and test for competing process accounts and alternative explanations that include vividness, anthropomorphism, attitude toward the ad, and distraction.

³As a follow-up to Study 1, we also conducted an additional within-subject study to incorporate participant-specific baseline ratings in the analysis. In the follow-up study, 69 undergraduate students reported their novelty ratings before they viewed the focal ad. After an unrelated filler task, participants were randomly shown one of two kinetic property ads and rated product novelty. Replicating Study 1, a one-way analysis of covariance on novelty judgments with participants' priors as a covariate revealed that product novelty judgments were greater in the high (vs. low) kinetic property ad ($M_{\text{high}} = 3.22$, $SD = 1.34$; $M_{\text{low}} = 2.44$, $SD = 1.24$; $F(1, 66) = 8.00$, $p < .01$).

Competing Process Accounts

One could argue that kinetic property may enhance novelty by increasing the vividness of the ad. A stimulus can be considered vivid when it is attention getting, emotionally interesting, imagery provoking, memorable, or easier to elaborate (Keller and Block 1997). However, although vividness affects attention paid to the ad, it should not affect novelty because it does not offer any visual cues related to animacy that contribute to inferences toward atypicality. Therefore, we do not expect it to play a mediating role in the proposed causal chain.

Anthropomorphism is another possible alternative explanation. Kinetic property may lead to anthropomorphic inferences wherein the product is thought to be "human-like." Note that anthropomorphism is generally perceived when nonhuman entities contain or elicit human forms (Kim and McGill 2011). However, our ad elements are restricted to product images that are visually and innately inanimate and, thus, do not include any human references. In addition, kinetic property—a motion-related property—does not contain any connotations of humanity. Thus, our theory leads us to expect kinetic property to generate visual liveliness without any attendant "human" or "life"-like judgments. Therefore, we do not expect anthropomorphic inferences/judgments to mediate our process. However, as with vividness, we measure and empirically test anthropomorphism in the causal chain.

We also examine whether attitude toward the ad (A_{ad}) has a process role. This examination is motivated by previous work showing that A_{ad} can affect downstream judgments (MacKenzie, Lutz, and Belch 1986) and the conjecture that kinetic property may affect participants' liking of the ad. However, whereas A_{ad} captures consumers' *affective* reactions to the ad, ad liveliness refers to consumers' *visual* impression of the ad and is restricted to the visual domain. Thus, we do not expect A_{ad} to play a mediating role but nevertheless empirically test for it in Studies 2 and 3.

Finally, even though Study 1 provides strong experimental evidence that distraction does not play a role in the effect observed, we further test for distraction using a different measure. In Study 2, we recruit a recall task to test whether kinetic property draws consumers' attention away from product attribute information, thereby leading to inflated novelty judgments.

Stimuli and Pretest

We created two versions (high and low kinetic property) of an advertisement introducing a fictitious new smartphone. As in Study 1, we used an incrementally new smartphone, and a pretest ($N = 30$, online panel) showcasing the product in a static ad confirmed that, a priori, the product was viewed as an INP ($M = 3.5$, $SD = 1.75$). A second pretest ($N = 83$; online panel) checked whether the two ads differed only on kinetic property and not on any other relevant dimensions. Participants were told that they would rate an ad on several dimensions and were randomly assigned to view one of two ads. We then asked them to rate kinetic property in the ad using a 100-point sliding scale: "I noticed direction changes in motion in the ad" (0 = "strongly disagree," and 100 = "strongly agree"). Participants also rated the ad's visual

appearance ($\alpha = .97$) and informativeness ($\alpha = .91$; for details, see Appendix A). As we expected, those in the high (vs. low) kinetic property ad condition detected greater kinetic property ($M_{\text{high}} = 69.46$, $SD = 25.18$; $M_{\text{low}} = 53.24$, $SD = 29.10$; $t(81) = 2.71$, $p < .01$). Importantly, the ads did not differ in terms of visual appearance ($M_{\text{high}} = 3.64$, $SD = 1.68$; $M_{\text{low}} = 3.54$, $SD = 1.54$; $t(81) = .29$, $p > .75$) or informativeness ($M_{\text{high}} = 4.30$, $SD = 1.44$; $M_{\text{low}} = 4.18$, $SD = 1.46$; $t(81) = .36$, $p > .7$).

Main Study

Fifty-nine undergraduate students (53% male) participated in a single-factor (kinetic property: high, low) between-subjects laboratory experiment in exchange for course credit. Participants were randomly assigned to view one of two pre-tested ads, subsequent to which they reported arousal ($\alpha = .93$) and ad liveliness ($\alpha = .94$). Next, we measured judgments of product novelty ($\alpha = .74$) and atypicality ($\alpha = .78$). We also measured participants' attention to the ad ($\alpha = .86$). Later, to test for the role of distraction, we measured participants' recall to check whether the kinetic property manipulation distracted from cognitive processing of ad messages. After the recall task, participants reported ad vividness ($\alpha = .76$), anthropomorphism perceptions ($\alpha = .79$), and A_{ad} ($\alpha = .88$), followed by demographic information.

Results and Discussion

Product novelty. A one-way ANOVA revealed a significant main effect for kinetic property ($F(1, 57) = 9.69$, $p < .01$). In support of H_{1a} , participants rated the product as more novel when kinetic property was high versus low ($M_{\text{high}} = 4.21$, $SD = 1.13$; $M_{\text{low}} = 3.26$, $SD = 1.21$).

In addition, both participants' recall ($M_{\text{high}} = 2.25$, $SD = 1.26$; $M_{\text{low}} = 2.47$, $SD = 1.22$; $t(57) = .67$, $p > .5$) and self-reported attention to the ad ($M_{\text{high}} = 4.57$, $SD = 1.34$; $M_{\text{low}} = 4.48$, $SD = 1.59$; $t(57) = .22$, $p > .8$) were not significantly different, indicating that kinetic property did not differentially affect attention to the ad and, thus, attribute encoding. This pattern indicates that distraction cannot explain the difference in novelty judgments between the high and low kinetic property ads. In addition, there were no significant differences in arousal ($M_{\text{high}} = 3.96$, $SD = 1.29$; $M_{\text{low}} = 3.40$, $SD = 1.49$; $t(57) = 1.53$, $p > .13$) or A_{ad} ($M_{\text{high}} = 2.76$, $SD = 1.38$; $M_{\text{low}} = 2.66$, $SD = 1.14$; $t(57) = .30$, $p > .75$) across the two ads.

Process mediation. Next, we estimated a serial multiple mediator model (Hayes 2012; Model 6) to test our proposed underlying process (H_{1b}). Regression coefficients appear in Figure 2. In support of H_{1b} , bootstrap analyses revealed a significant serial mediation effect (.3139, 95% confidence interval [CI] = [.10, .73]). Other than this significant serial causal chain, all other causal chains in the model yielded confidence intervals including zero.

Competing accounts. To test for alternative causal chains, we first estimated a serial multiple mediator model with ad liveliness replaced with ad vividness. Kinetic property did not affect ad vividness ($\beta = .16$, $t = .51$, $p > .6$), and moreover, vividness did not affect atypicality inferences ($\beta = .24$, $t = 1.83$, $p > .05$). Process analysis further confirmed that the alternative

process of ad vividness mediating the effect of kinetic property (kinetic property \rightarrow ad vividness \rightarrow product atypicality \rightarrow product novelty) was not supported (.0191, 95% CI = [-.03, .16]).

A second serial mediation analysis using anthropomorphism as a process variable again revealed no effect of kinetic property on anthropomorphism ($\beta = .20$, $t = .50$, $p > .6$) and no effect of anthropomorphism on atypicality ($\beta = .15$, $t = 1.43$, $p > .15$). Furthermore, the overall alternative path through anthropomorphism (kinetic property \rightarrow anthropomorphism \rightarrow product atypicality \rightarrow product novelty) was also not supported (.0153, 95% CI = [-.03, .18]). Finally, a third process model with A_{ad} as a mediator (kinetic property $\rightarrow A_{\text{ad}} \rightarrow$ product atypicality \rightarrow product novelty) also revealed no support for the indirect path (.0117, 95% CI = [-.07, .14]).

In summary, Study 2 yields support for our proposed process: kinetic property enhances ad liveliness, which in turn increases how atypical the focal product is inferred to be. In addition, increased atypicality drives greater novelty judgments. Moreover, the data suggest that in the context of kinetic property, the alternative explanations of ad vividness, anthropomorphism, and A_{ad} do not hold. Finally, Study 2 also confirms that kinetic property does not distract ad processing.

Although this evidence lends support to the hypothesized theory, one concern may be that the experimental procedure could have driven the effects. That is, because we measured novelty after participants reported their ad liveliness impressions, ad liveliness might have served as an anchor. To address this issue, we took two steps: First, we conducted a replication ($N = 40$) with a modified procedure to ensure clearer methodological separation (Podsakoff et al. 2003). Second, we estimated multiple structural equation models with correlated errors.⁴ We found that (1) the revised empirical study replicated our previous results, including the serial mediation pattern, and (2) across different structural equation models (with and without correlated errors), the core effect and mediation paths remained robust (i.e., theoretical inferences do not change; for details, see Web Appendix A). Taken together, these follow-up analyses help rule out concerns that methodological issues (e.g., rating spillover, correlated measurement errors) led to the serial mediation pattern.

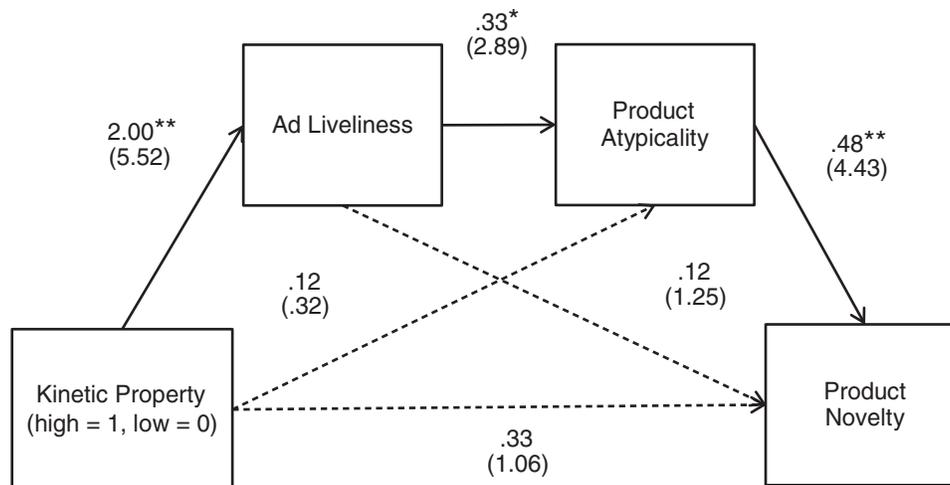
Going forward, we explore how the novelty-enhancing effect of kinetic property varies across different types of new products. Because kinetic property shapes novelty judgments through inference making, it is likely that product attribute information that is simultaneously conveyed along with kinetic property affects what kind of inferences are made. Thus, how influential kinetic property is as a visual cue should be moderated by the type of new product being advertised (i.e., whether it is an INP or a radically new product [RNP]).

Study 3: Two-Channel Cue Provision and the Moderating Role of Innovation Type

A robust stream of literature has documented how products differ on innovation levels and classifies them as being either

⁴We thank the area editor for the recommendation on the follow-ups.

FIGURE 2
Study 2: The Indirect Effect of Kinetic Property on Novelty Perceptions



* $p < .05$.

** $p < .001$.

Notes: Number of bootstrap samples = 5,000. Regression coefficients are unstandardized.

incrementally or radically new (Chandy and Tellis 1998). Incrementally new products are characterized by refinement of existing product attributes and are consistent with consumers' preexisting knowledge, whereas RNPs bring new attributes to the table that challenge and expand consumers' preexisting knowledge (Hoeffler 2003). From a marketing communication standpoint, product-attribute information conveyed in an ad often helps separate INPs from RNPs.

Next, consider a multimedia ad execution that contains kinetic property. Here, we begin with the premise that such an ad conveys two types of diagnostic cues simultaneously. First, pictorial and text ad elements directly inform consumers of attribute information. Such information forms an explicit cue that should be cognitively processed to evaluate the focal product. Second, kinetic property embedded in the moving ad elements conveys sensory cues (ad liveliness, as Studies 1 and 2 demonstrate). Thus, both types of communicative cues—cognitive and sensory—occur simultaneously in the given ad. This two-channel cue provision notion finds parallels in research on advertising (Messaris 1997; Peracchio and Meyers-Levy 2005), attitudes (Chaiken and Maheswaran 1994; Petty, Cacioppo, and Schumann 1983), and embodied cognition (Chae and Hoegg 2013; Sundar and Noseworthy 2014).

Furthermore, we posit that between these two types of cues, sensory cues will be processed earlier and faster. This conjecture is also supported by previous work on preattentive processing: because kinetic property is a sensory input, it should be visually preattended (Greenwald and Leavitt 1984; Jarvenpaa 1990) before attribute information is cognitively elaborated on. Thus, consumers should form novelty judgments almost instantaneously when an ad execution contains kinetic property. Such judgments should precede inferences derived from cognitive processing of attribute information. Prior research on elaboration and ad processing has also suggested that attribute information processing is relatively effortful

and slow compared with perceptual processing (Chaiken and Maheswaran 1994; MacInnis and Jaworski 1989).

Taken together, it follows that the presence of kinetic property in an ad should change the locus of inference from product attributes to ad liveliness. That is, in the presence of kinetic property, consumers rely less on attribute information to derive downstream judgments. Note that we do not suggest that attribute information is not processed (or less attended to); it is merely not adequately recruited by the consumer in the inferential process. Results from Levene's test of equality of variance and posttest for Study 3 support this expectation.

Why should the shift in the locus of inference matter? Consider a new product advertised with an ad execution containing moving ad elements. If the locus-of-inference argument holds, we should observe the following: First, in the case of the low kinetic property ad, although kinetic property is processed earlier through the sensory route (i.e., the shift in inferential cue occurs), because the ad does not offer strong visual liveliness cues, novelty perceptions should be determined by cognitively processed attribute information. Thus, in this case, by definition RNPs should be perceived as more novel than INPs.

In contrast, when there is high kinetic property in the ad, it conveys meaningful visual liveliness cues owing to the presence of direction changes embedded in moving elements (as Studies 1 and 2 demonstrate). This cueing should lead to stronger atypicality/novelty inferences in the case of INPs (replication of H_1). However, in the case of RNPs, because a priori novelty judgments are relatively higher, it would be difficult to enhance them further using kinetic property. Thus, novelty judgments for RNPs will remain unchanged. Taken together, kinetic property will enhance novelty judgments for INPs but not RNPs, thereby reducing the difference in judged novelty between INPs and RNPs. From this conceptualization, we formally hypothesize the following:

H₂: The difference in novelty judgments between INPs and RNPs is significantly less (greater) after exposure to the high (vs. low) kinetic property ad.

At this point, we highlight again that distraction or attentional differences should not drive the differential effects of kinetic property across product types. That is, kinetic property does not interfere with attention capture and/or learning of information in the ad (as Study 2 shows), but it does change the locus of inference from attribute information to ad liveliness. If attention differences or distraction is causal, consumers should differ in their attention toward the ad and/or encoding of attribute information; however, we do not find evidence for any such differences in our data (for details, see Study 3's "Results and Discussion" subsection). Furthermore, if distraction is in play and kinetic property leads respondents to guess or respond randomly, we should also observe differences in the variance of novelty judgments between conditions; however, Levene's test of equality of variance does not support this expectation ($p > .25$).⁵

Stimuli and Pretest

For this study, we created ads introducing a fictitious new tablet. We utilized a commonly available tablet as the INP stimulus and a new type of tablet providing advanced technology and functionality (i.e., flexible organic light-emitting diode display and interchangeable hardware) as the RNP stimulus. Product images were included in the stimuli. We manipulated kinetic property similarly to previous studies. A pretest ($N = 84$; online panel) indicated that kinetic property was greater in the high (vs. low) kinetic property ad ($M_{\text{high}} = 73.28$, $SD = 20.62$; $M_{\text{low}} = 52.10$, $SD = 29.44$; $t(82) = 3.83$, $p < .001$). The two ads did not differ on visual appearance ($\alpha = .96$; $M_{\text{high}} = 4.14$, $SD = 1.80$; $M_{\text{low}} = 3.90$, $SD = 1.77$; $t(82) = .61$, $p > .5$) or informativeness ($\alpha = .92$; $M_{\text{high}} = 4.38$, $SD = 1.51$; $M_{\text{low}} = 4.57$, $SD = 1.25$; $t(82) = .62$, $p > .5$).

Main Study

One hundred seventeen undergraduate students (52% male) participated in a 2 (innovation type: RNP, INP) \times 2 (kinetic property: high, low) between-subjects factorial online experiment in exchange for course credit. Participants were randomly shown one of the four pretested advertisements, after which they were administered the survey containing dependent measures and covariates. We measured ad liveliness ($\alpha = .89$), product novelty ($\alpha = .88$), and product atypicality ($\alpha = .90$). We also captured participants' attention to the ad ($\alpha = .91$), arousal ($\alpha = .87$), and A_{ad} ($\alpha = .94$). Finally, participants provided demographic information.

Results and Discussion

Product novelty. A 2 (innovation type) \times 2 (kinetic property) analysis of covariance with A_{ad} as a covariate revealed a significant main effect for innovation type ($M_{\text{RNP}} = 4.35$, $SD = 1.49$; $M_{\text{INP}} = 3.36$, $SD = 1.40$; $F(1, 112) = 20.45$,

$p < .001$) and no main effect for kinetic property ($p > .75$). Furthermore, the two-way interaction between innovation type and kinetic property was significant ($F(1, 112) = 11.83$, $p < .001$). As we hypothesized, planned contrasts revealed that when kinetic property was low, novelty ratings were greater for RNPs than for INPs ($F(1, 112) = 33.04$, $p < .001$), whereas when kinetic property was high, novelty ratings were not significantly different across RNPs and INPs ($F(1, 112) = .56$, $p > .45$).

Importantly, a within-group contrast shows that this reduction in differences was partly driven by the enhancement of novelty judgments for the INP ($F(1, 112) = 5.82$, $p < .05$), replicating the core effect found in previous studies. Notably, we also find that kinetic property reduced the novelty judgments of RNPs ($F(1, 112) = 7.35$, $p < .01$), a pattern consistent with the shift-in-locus-of-inference argument outlined previously.

The main effect for A_{ad} was significant and positive ($F(1, 112) = 50.42$, $p < .001$), but removing A_{ad} as a covariate does not change any results. Additional ANOVAs with attention (all $ps > .15$), arousal (all $ps > .2$), and A_{ad} (all $ps > .2$) as dependent measures indicate no differences across conditions. Means and standard deviations appear in Table 1.

We also conducted a posttest ($N = 29$; within-subject design; randomized presentation of stimuli) to determine whether participants' attention toward product attributes (i.e., attribute encoding levels) systematically differed across conditions. The results show that attribute information was adequately encoded ($M = 2.42$, $SD = .91$, range = 0–4). Furthermore, there were no differences in attribute recall between the high and low kinetic property ads across innovation type ($p > .8$), thereby mitigating concerns of differential attention between conditions. Finally, the core serial mediation pattern observed in Study 2 was replicated for the data in this study as well (.2382, 95% CI = [.03, .50]).

To recap, Study 3 shows that the novelty-enhancing effect of kinetic property is circumscribed by innovation type: kinetic property increases novelty perceptions when innovation type is incremental but does not do so when innovation type is radical. We next focus on explicating the role of a theoretically motivated factor circumscribing the novelty-enhancing effect of kinetic property: figure-ground contrast (Guido 2001; Wagemans et al. 2012).

Study 4: Moderation by Figure-Ground Contrast

Figure-ground contrast is a factor that relates to the ease with which humans process visual stimuli (Guido 2001; Jarvenpaa 1990). This theory suggests that how a visual stimulus is processed is not just determined by an isolated aspect of the stimulus; instead, it is often a consequence of feature contrast between different stimulus elements (Milosavljevic et al. 2012). This is because one element in a frame often affects how other elements are visually processed. For example, for foreground figures to be sufficiently processed, they should be distinguishable from background settings. Thus, depending on how visually demanding an ad background is,

⁵We thank Reviewer 1 for this recommendation.

TABLE 1
Results for Studies 3–5: Means and Standard Deviations

	Study 3		Study 4		Study 5a		Study 5b	
	Innovation Type		Figure-Ground Contrast		Adaptation		Market Dynamism	
	INP	RNP	High	Low	Nonadaptation	Adaptation	High	Low
Product Novelty								
High kinetic property	3.77 (1.24)	4.06 (1.26)	4.47 (1.18)	3.70 (.86)	4.86 (1.22)	4.16 (1.48)	3.51 (1.31)	2.68 (1.21)
Low kinetic property	2.98 (1.45)	4.61 (1.65)	3.45 (1.20)	3.82 (1.11)	4.29 (1.31)	4.40 (1.44)	2.74 (1.00)	2.95 (1.02)
Willingness to Pay (\$)								
High kinetic property					193.28 (121.50)	174.73 (109.86)		
Low kinetic property					147.80 (86.36)	186.16 (110.22)		
Purchase Intentions								
High kinetic property							4.09 (1.52)	2.95 (1.24)
Low kinetic property							3.35 (1.29)	3.65 (1.45)
Arousal								
High kinetic property	3.58 (1.32)	3.24 (1.23)	3.53 (1.30)	3.63 (1.44)	4.37 (1.30)	4.02 (1.47)	4.30 (1.68)	3.30 (.88)
Low kinetic property	3.62 (1.16)	3.46 (1.32)	3.38 (1.50)	3.39 (1.46)	4.41 (1.44)	4.00 (1.47)	3.26 (1.54)	3.44 (1.38)
Attention								
High kinetic property	4.52 (1.60)	4.67 (1.52)	4.06 (1.50)	3.78 (1.07)	5.04 (1.45)	4.94 (1.39)	3.89 (1.50)	3.60 (1.59)
Low kinetic property	4.08 (1.71)	4.04 (1.66)	3.60 (1.72)	3.95 (1.32)	4.92 (1.58)	4.86 (1.65)	3.74 (1.55)	3.92 (1.23)
Attitudes Toward the Ad								
High kinetic property	3.24 (1.44)	3.33 (1.73)	2.94 (1.50)	1.77 (.72)	4.17 (1.64)	3.67 (1.85)	3.44 (1.43)	2.59 (1.28)
Low kinetic property	3.04 (1.42)	2.83 (1.44)	2.90 (1.39)	2.47 (1.37)	3.92 (1.59)	3.84 (1.64)	2.70 (1.04)	2.72 (1.06)

Notes: Each cell reports raw means and standard deviations (in parentheses).

the foreground kinetic property may be more (or less) distinguishable and, consequently, differentially effective. In a conceptual article, Lurie and Mason (2007) suggest that when figures are distinguishable from ground settings, they are likely to exert a greater impact on judgments and perceptions. In addition, Pieters, Wedel, and Batra (2010) show that figure-ground contrast shapes the visual complexity of a print ad, in turn affecting brand identifiability.

We recruit similar insights for Study 4. We utilize an optical illusion–inducing background (see Web Appendix B) to manipulate figure-ground contrast between kinetic property—our foreground element—and the ad background. Building on the previous discussion, we suggest that when figure-ground contrast is low (i.e., the ad background is visually demanding), kinetic property will be less likely to “pop out” in relation to the background. Therefore, its impact on novelty judgments should be mitigated. In contrast, when figure-ground contrast is high (i.e., the background is less visually

demanding), kinetic property will be distinguishable and the earlier observed effects on novelty will manifest. Formally,

H₃: With high figure-ground contrast, novelty judgments are greater for the high (vs. low) kinetic property ad, but with low figure-ground contrast there is no difference.

Stimuli and Pretest

We created online ads introducing a fictitious new digital camera. A pretest (N = 83; online panel) indicated that kinetic property was greater in the high (vs. low) kinetic property ad ($M_{\text{high}} = 66.05$, $SD = 26.34$; $M_{\text{low}} = 50.40$, $SD = 27.02$; $t(81) = 2.67$, $p < .01$), but the two ads did not differ on visual appearance ($\alpha = .94$; $M_{\text{high}} = 2.74$, $SD = 1.32$; $M_{\text{low}} = 2.81$, $SD = 1.50$; $t(81) = .23$, $p > .8$) or informativeness ($\alpha = .93$; $M_{\text{high}} = 3.82$, $SD = 1.38$; $M_{\text{low}} = 4.22$, $SD = 1.36$; $t(81) = 1.34$, $p > .15$).

Main Study

Seventy-five undergraduate students (56% male) participated in a 2 (figure-ground contrast: high, low) \times 2 (kinetic property: high, low) between-subjects laboratory experiment in exchange for course credit. Participants were asked to imagine that they were visiting a website to buy a new digital camera and were randomly shown one of four pretested ads introducing a new digital camera (an INP). To manipulate figure-ground contrast, we used two versions of an optical illusion-inducing image as the ad background (see Web Appendix B).

After viewing the website ad, participants reported their arousal ($\alpha = .90$) and novelty judgments ($\alpha = .73$). We also measured attribute recall to test whether the background graphic impeded participants' cognitive processing. Analyses showed that recall was not significantly different across conditions (all $ps > .35$), indicating that the figure-ground contrast manipulation was isolated to the visual domain and did not affect cognitive processing (i.e., did not impose cognitive load). Participants then responded to the manipulation check measures for figure-ground contrast on seven-point scales: "How difficult was it to identify the relevant information from the graphics in the ad background?" "How hard was it to tell apart the product information from the graphics in the ad background?" and "How distracting were the graphics in the ad background while you viewed the ad?" ($\alpha = .87$). Finally, they indicated attention to the ad ($\alpha = .87$) and A_{ad} ($\alpha = .92$), followed by demographic information.

Results and Discussion

Manipulation check. A t-test revealed that the figure-ground contrast manipulation was successful ($M_{low\ contrast} = 5.54$, $SD = 1.35$; $M_{high\ contrast} = 4.41$, $SD = 1.69$; $t(73) = 3.20$, $p < .01$).

Product novelty. A two-way ANOVA revealed no significant main effects ($ps > .05$), but as we hypothesized, the two-way interaction between figure-ground contrast and kinetic property was significant ($F(1, 71) = 5.09$, $p < .03$). As Table 1 illustrates, when figure-ground contrast was high, novelty judgments were greater in the high (vs. low) kinetic property ad ($F(1, 71) = 7.75$, $p < .01$). However, when figure-ground contrast was low, novelty judgments were equivalent across the two ads ($F(1, 71) = .12$, $p > .7$). There were no differences in arousal (all $ps > .6$) or attention to the ad (all $ps > .3$) across all conditions. Finally, as with Studies 2 and 3, A_{ad} did not differ by ad type; in addition, including/removing A_{ad} as a covariate does not change the results.

The results indicate that with lower figure-ground contrast, kinetic property becomes less distinguishable, which reduces the likelihood that the ad will provide the visual liveliness cues needed for enhancing novelty, in turn leading consumers to base their judgments on attribute information. This has the effect of reducing novelty judgments, in line with the inherent innovativeness of the product (an incrementally new digital camera). Thus, these results are consistent with the inference-based rationale advanced in H_2 .

Across Studies 3 and 4, we have laid out conditions in which product-related (innovation type in Study 3) or

process-related (figure-ground contrast in Study 4) factors moderate the effect of kinetic property. Furthering these studies, in Study 5 we introduce two managerially motivated moderators: visual adaptation to animations and product category characteristics. In addition, we examine downstream variables such as WTP and purchase intentions.

Study 5: Moderation by Ecologically Relevant Factors

In Study 5, we outline two ecologically relevant factors and demonstrate their moderating role. First, we address the characteristics of the environment in which consumers may be viewing an ad. Specifically, we examine how the nature of preceding ads can affect the processing of kinetic property-laden ads—adaptation (vs. no adaptation) in Study 5a.⁶ Second, Study 5b investigates how product category characteristics of the advertised product interact with kinetic property. For this, we focus on how the fit between a specific product category characteristic—market dynamism—and kinetic property affects consumers' inference making.

Study 5a: Contextual Adaptation

Prior research has proposed that the stimuli that precede an ad often determine how consumers respond to the ad (Cox, Cox, and Mantel 2010; Puccinelli, Wilcox, and Grewal 2015). For example, Puccinelli, Wilcox, and Grewal (2015) report that emotions induced by movies lead viewers to avoid energetic commercials that follow the movie. This argument is also in line with related research exploring adaptation effects (Folkes and Matta 2004; Nelson, Meyvis, and Galak 2009). These researchers suggest that exposure to preceding stimuli (e.g., product packages, advertisements) not only leads consumers to quickly adapt to their experiences of the stimuli but also decreases their responsiveness to the following target stimulus.

This discussion offers the substantive implication that an ad-viewing context that leads consumers to adapt to a specific ad feature (i.e., kinetic property, in our case) would alter intended advertising effects. Drawing on this notion, we propose that when consumers are exposed to a series of similarly animated ads (i.e., adaptation condition), their novelty judgments will be less affected by kinetic property because they have adapted to animated visuals in the focal ad. In contrast, the novelty-enhancing effect of kinetic property will manifest when consumers are not visually adapted to animations (i.e., nonadaptation condition). Taken together,

H_4 : In the nonadaptation condition, novelty judgments are greater for the high (vs. low) kinetic property ad, but this difference is not present in the adaptation condition.

Study 5a Stimuli, Design, and Procedure

We developed high and low kinetic property ads introducing a fictitious, incrementally new smartphone. The kinetic property manipulation followed previous studies. We also prepared four web ads introducing other INPs as ad stimuli preceding the focal ad. Related work on repetition has suggested

⁶We thank the area editor for the recommendation for Study 5a.

that two or three exposures are usually sufficient to induce adaptation (e.g., Campbell and Keller 2003). To avoid tedium, we had participants view five ads in total, including the focal ad. To minimize product-category confounds, we also used consumer electronics products (laptops, tablets, digital cameras, and printers) in the four preceding ads. For the adaptation group, animations of the same kind being used in the focal ad were embedded into the four preceding ads, so that participants were contextually adapted. For the nonadaptation group, a random set of four ads (using the same products as in the other group) was presented followed by the focal ad. Importantly, for both the adaptation and nonadaptation conditions, we took care to ensure that relevant physical ad features such as the size of the product image, number of images, number of trajectories, trajectory length, start and end points of individual trajectories, and amount of textual information presented in the four preceding ads were identical to that of the focal ad.

Two hundred thirty ($M_{\text{age}} = 37.33$ years; 57% male) consumers from an online panel participated in a 2 (adaptation: nonadaptation, adaptation) \times 2 (kinetic property: high, low) between-subjects factorial experiment. Participants were told that they would be shown five online advertisements and would evaluate one of the five ads. Then, they were randomly assigned to one of four conditions. The four preceding ads were presented in randomized order, and the focal ad was always shown at the end. After viewing all five ads, participants read a filler story. Subsequently, participants reported their arousal ($\alpha = .88$), product novelty judgments ($\alpha = .86$), and WTP. We also measured participants' recall of attribute information. After the recall task, participants indicated attention to the ad ($\alpha = .91$), A_{ad} ($\alpha = .96$), and the ad's visual appearance ($\alpha = .97$) and informativeness ($\alpha = .88$). They then responded to a manipulation check measure for kinetic property and provided demographic information.

Study 5a Results and Discussion

Manipulation check. Independent-sample t-tests indicated that kinetic property was greater in the high (vs. low) kinetic property ad ($M_{\text{high}} = 55.11$, $SD = 31.55$; $M_{\text{low}} = 37.03$, $SD = 27.54$; $t(228) = 4.62$, $p < .001$).

Product novelty. A two-way ANOVA revealed no significant main effects ($ps > .1$), but a significant two-way interaction ($F(1, 226) = 5.19$, $p < .05$) emerged, in support of H_4 (Table 1 provides means and standard deviations). Replicating our core effect, within the nonadaptation group, novelty judgments were greater in the high (vs. low) kinetic property ad ($F(1, 226) = 5.07$, $p < .05$), whereas within the adaptation group, novelty judgments were equivalent across both ads ($F(1, 226) = 1.05$, $p > .3$). In addition, there were no differences in participants' arousal ($p > .9$), attention to the ad ($p > .6$), A_{ad} ($p > .8$), recall ($p > .5$), the ad's visual appearance ($p > .6$), and the ad's informativeness ($p > .6$) across the two kinetic property conditions.

WTP. Consistent with prior research on the downstream effects of novelty judgments (Ziamou and Ratneshwar 2003), we expect WTP to reflect the pattern observed for novelty judgments. In addition, novelty should mediate the effect of kinetic property on WTP. A two-way ANOVA on WTP

revealed no significant main effects ($ps > .2$) but indicated a significant two-way interaction between adaptation and kinetic property ($F(1, 226) = 3.99$, $p < .05$). As Table 1 shows, within the nonadaptation group, WTP was greater with high (vs. low) kinetic property ads ($F(1, 226) = 5.02$, $p < .05$), but within the adaptation group, WTP was not different across the two ads ($F(1, 226) = .31$, $p > .55$).

Bootstrap analyses with kinetic property as antecedent, WTP as criterion, contextual adaptation as moderator, and novelty judgments as mediator revealed support for moderated mediation (Hayes 2012, Model 7). Specifically, the effect of kinetic property on WTP through novelty was significant and positive within the nonadaptation group (9.5359, 95% CI = [2.06, 22.44]), but not so within the adaptation group (-4.1662, 95% CI = [-16.22, 3.72]).

To recap, Study 5a shows that when consumers are contextually adapted to kinetic animations, the effect of kinetic property is mitigated. This finding implies that contextual factors such as the immediate environment in which consumers view an ad can lead to adaptation to advertising features and determine their subsequent responses. We also show that enhanced novelty judgments by kinetic property further affect consumers' WTP.

Study 5b: Market Dynamism

In our studies so far, we have shown effects for kinetic property for high-technology products (e.g., smartphones, tablets, digital cameras). Such products are often characterized by highly dynamic and fast-changing technologies, customer needs, or firm strategies (Henard and Szymanski 2001). In contrast, other product categories involve relatively stable technologies or longer product life cycles and thus remain much the same in markets (Aaker and Jacobson 2001; Rubera and Kirca 2012). Previous research has defined this characteristic as market dynamism and suggested that it varies substantially across brands or product categories (Maltz and Kohli 1996; Mizik and Jacobson 2008). In Study 5b, we examine how consumers' perceptions of market dynamism interact with kinetic property executions.⁷

To elaborate, when a given product category is highly dynamic, consumers would expect to see dynamic visual features in its product advertisements. Moreover, consumers' response to the focal product would be more favorable when their a priori expectations of ad features for a given product category are met. Prior research has supported this conjecture (e.g., Chae and Hoegg 2013; Cian, Krishna, and Elder 2014). For example, Cian, Krishna, and Elder (2014) show that consumers evaluate a modern brand more favorably when its logo has a dynamic design. However, when a given product category is more stable (i.e., less dynamic), novelty is likely to be a less important determinant of marketplace success (Rubera and Kirca 2012). In this case, ad executions aimed at enhancing novelty are also likely to be less impactful. Consumers should not expect to see ad executions aimed at bolstering novelty perceptions. In our case, high kinetic property ads should thus be less relevant/expected. Combining

⁷We thank Reviewers 1 and 2 for their recommendations for Study 5b.

these expectations, we suggest that kinetic property-laden executions would be effective in enhancing novelty judgments for a product category that is high in market dynamism (e.g., smartphones, mobile apps) but should not be effective for a product category with low market dynamism (e.g., home furnishings, office products). Formally,

H₅: When the focal product category is high in market dynamism, product novelty judgments are greater for the high (vs. low) kinetic property ad, but this difference is not present when the focal product category is low in market dynamism.

In Study 5b, we examine H₅ by priming (high or low) market dynamism for the focal product.⁸

Study 5b Stimuli, Design, and Procedure

For this study, we use printers as the focal product. We created two versions of market dynamism descriptions for the U.S. printer market. Depending on the market dynamism condition, the U.S. printer market was described as having either quickly or slowly changing product models, consumer preferences, and promotion/advertising strategies (see Web Appendix C). We also developed two ads introducing a fictitious, incrementally new printer by varying kinetic property. We manipulated kinetic property in the same manner as previous studies.

Ninety-six undergraduate students (49% male) participated in a 2 (market dynamism: high, low) × 2 (kinetic property: high, low) between-subjects factorial laboratory experiment in exchange for course credit. Upon arrival, participants were told that they would be evaluating a new printer and asked to read an excerpt from online news describing the U.S. printer market. Then, they were randomly assigned to read one of the two (high vs. low) market dynamism descriptions. Next, participants were randomly shown one of the two (high vs. low) kinetic property advertisements.

After viewing the ad, participants reported their arousal ($\alpha = .91$), product novelty judgments ($\alpha = .77$), and purchase intentions ($\alpha = .85$). Next, we measured participants' recall of attribute information. After the recall task, we measured participants' attention to the ad ($\alpha = .90$), A_{ad} ($\alpha = .89$), and the ad's visual appearance ($\alpha = .95$) and informativeness ($\alpha = .80$). Participants then responded to the manipulation check measures for market dynamism and kinetic property on seven-point scales. For the market dynamism manipulation check, we asked participants to rate how slowly or quickly product models, consumer preferences for features, selling strategies, and promotion/advertising strategies change in the printer market (1 = "very slowly," and 7 = "very quickly"; $\alpha = .92$). Finally, participants provided demographic information.

Study 5b Results and Discussion

Manipulation checks. A t-test revealed that the high market dynamism group rated the printer market as changing more quickly in terms of product models, consumer

⁸A different study (N = 104) also examined the moderating effect of market dynamism by actually varying product categories (smartphones vs. table lamps) and replicated the findings observed in Study 5b.

preferences, selling strategies, and promotion/advertising strategies ($M_{high\ dynamism} = 5.58$, $SD = 1.04$; $M_{low\ dynamism} = 3.18$, $SD = 1.36$; $t(94) = 9.76$, $p < .001$). Kinetic property was greater in the high (vs. low) kinetic property ad ($M_{high\ KP} = 5.06$, $SD = 1.68$; $M_{low\ KP} = 4.15$, $SD = 1.54$; $t(94) = 2.78$, $p < .01$).

Product novelty. A two-way ANOVA revealed no significant main effects ($ps > .15$) but, as we hypothesized, a significant two-way interaction emerged between market dynamism and kinetic property ($F(1, 92) = 4.80$, $p < .05$). Specifically, within the high market dynamism group, novelty judgments were greater in the high (vs. low) kinetic property ad ($F(1, 92) = 5.91$, $p < .05$), whereas within the low market dynamism group, novelty judgments were equivalent across the two ads ($F(1, 92) = .49$, $p > .45$). Participants' arousal ($p > .05$), attention to the ad ($p > .8$), A_{ad} ($p > .15$), and recall ($p > .1$), as well as the ad's visual appearance ($p > .4$) and informativeness ($p > .15$), were not significantly different across the two kinetic property conditions.

Purchase intentions. A two-way ANOVA revealed a significant two-way interaction ($F(1, 92) = 6.38$, $p < .05$). No other effects were significant ($ps > .15$). Within the high market dynamism group, purchase intentions were greater with high (vs. low) kinetic property ads ($F(1, 92) = 3.83$, $p < .05$) but were not different across ad type within the low market dynamism group ($F(1, 92) = 2.61$, $p > .1$). Furthermore, novelty judgments mediated the effect of kinetic property on purchase intentions when market dynamism was high (.4922, 95% CI = [.09, .98]), whereas this path was not significant when market dynamism was low (-.1695, 95% CI = [-.66, .23]).

In Study 5b, we outline a second managerially relevant moderator: market dynamism. This study demonstrates that the novelty-enhancing effect of kinetic property holds when the focal category's market dynamism is high but dissipates when it is low. We also show that kinetic property, under certain conditions, positively affects downstream purchase intentions. Study 5b is also consistent with prior work that has shown that consumers may not always want product novelty (Gourville 2006). This implication is particularly relevant for more stable product categories.

General Discussion

Across six studies, we outline a new substantive finding: that kinetic property embedded in ads enhances consumer judgments of product novelty. Studies 1 and 2 document the phenomenon and explicate the underlying process: kinetic property generates impressions of ad liveliness, which lead to inferences of product atypicality and, consequently, higher novelty judgments. Study 3 shows that kinetic property is effective in heightening novelty judgments for incremental, but not radical, innovations. Study 4 further extends this framework by outlining a theoretically driven moderator: figure-ground contrast. Specifically, the core effect is mitigated when figure-ground contrast makes kinetic property less discriminable. Studies 5a and 5b outline two substantively motivated contextual moderators: adaptation (Study 5a) and market dynamism (Study 5b). Study 5a shows that contextual adaptation can mitigate the effect of kinetic property, while

Study 5b shows that kinetic property is effective when consumers perceive the category being advertised to have higher (vs. lower) levels of market dynamism. Studies 5a and 5b also document downstream effects of kinetic property on WTP and purchase intentions.

Theoretical Contributions

Several aspects of this initial investigation examining the effect of kinetic property in advertising contribute to the extant literature. First, our primary contribution lies in uncovering a new determinant of consumers' novelty judgments: kinetic property in ads. Prior marketing research exploring animations has focused either on animation as personifications/avatars (e.g., Holzwarth, Janiszewski, and Neumann 2006) or on how animations in banner ads distract web users from performing a focal task and thus annoy them (Goldstein et al. 2014). In contrast, by integrating theory from psychophysics, vision research, and marketing, we pinpoint a specific property of animations—kinetic property, defined as direction changes in on-screen motion paths—that could make animated ads more effective. Likewise, our work contributes to the nascent literature on multimedia advertising (Goldstein et al. 2014; Puccinelli, Wilcox, and Grewal 2015). More generally, it adds to the literature on the impact of visual properties of marketing communication (e.g., Cian, Krishna, and Elder 2014; Hagtvedt 2011).

Second, we outline a novel theoretical framework as to why kinetic property generates positive effects on consumer novelty judgments. To this end, we delineate an inference-based process mechanism. Stronger impressions of visual liveliness lead consumers to infer the advertised product as atypical of its category, which in turn leads to greater judgments of product novelty. Our explication of process also contributes to the parent literature on perceptual animacy (e.g., Tremoulet and Feldman 2000). Prior visual perception literature has primarily treated perceptual animacy as an end state of visual processing, and little research has examined its impact on subsequent outcomes (for an exception, see Gao, McCarthy, and Scholl 2010). Furthering prior work, we not only link perceptual animacy, a low-level visual-perception construct, to high-level cognition and inference (i.e., perceptions about ads, atypicality, and novelty of advertised products) but also show that this extended linkage further shapes consequential downstream outcomes such as WTP and purchase intentions.

Third, we uncover three theoretically and substantively relevant boundary conditions: (1) innovation type, (2) figure-ground contrast between kinetic property and ad background, and (3) contextual adaptation and market dynamism. By delineating these boundary conditions, we show when and where the positive effect of kinetic property on novelty judgments manifests or is moderated across four studies. Combining these results with evidence for our proposed mechanism, we offer theoretical insights for further research on animated advertisements.

Managerial Implications

Although dynamic content such as motion graphics and kinetic typography is extensively used in online advertising,

there exist few substantive guidelines that can help firms' decision making in this regard. This research aims to provide theoretically grounded insights on the role of dynamic content in marketing communications.

First, we demonstrate that kinetic property enhances novelty judgments, particularly when the product is an incremental innovation. This finding opens up opportunities for nondominant firms (e.g., low-innovation firms, low-budget brands) to more effectively advertise their new products. Although RNPs have received much attention from scholars and marketers, the lion's share of new product introductions are actually INPs. For example, 75% of new product markets for industrial goods start with an incremental innovation (Min, Kalwani, and Robinson 2006). Moreover, the strategy of pursuing a strong base of incremental innovations is also beneficial because they are associated with lower risk and normal profits (Sorescu and Spanjol 2008). Given this context, we believe that the insight that kinetic property can help better communicate novelty for incremental innovations offers substantively significant implications for a variety of firms and a broad array of new products.

Second, as Study 4 makes clear, the manner in which kinetic property is executed within a multimedia ad can also have strong effects on its effectiveness. If other elements within the ad execution combine in such a way that figure-ground contrast is reduced, we find that kinetic property becomes less discriminable. As a result, its novelty-enhancing effect is mitigated. This is an especially important issue for multimedia advertising executions in which different visual inputs can be used together in a single ad, and our research offers tactically relevant insights on factors that can help marketers design more visually balanced advertisements.

Third, Studies 5a and 5b offer relevant contextual boundaries to when and where marketers should utilize kinetic property. Study 5a shows that short-term adaptation to animated ads can lead consumers to quickly acclimate to kinetic property; thus, its positive effect could be mitigated. Insights from these findings are particularly relevant given recent advances in behavioral targeting. Because behavioral targeting enables an online ad to be displayed on a specific web page by tracking consumers' browsing behavior (Schumann, Wangenheim, and Groene 2014), it may help marketers determine when and where to position animated ads and maximize advertising effectiveness. This issue is highly relevant to the current online multimedia environment, in which consumers are often exposed to various types of content sequentially or simultaneously.

In Study 5b, we outline how perceived market dynamism acts as a second substantively important moderator. As results show, kinetic property has a positive impact on novelty judgments in more (vs. less) dynamic product categories. This finding accentuates the importance of taking consumers' a priori expectations or mental models about product categories into account when deploying kinetic property. These two factors outlined across Studies 5a and 5b are particularly important because they have a subsequent impact on behavioral outcomes.

Overall, we suggest that kinetic property in ads often represents a middle ground between overwrought animations on the one hand and simple static content on the other. Thus,

advertisements embedded with kinetic property offer an avenue to communicate with consumers without imposing significant visual or affective load. The results across our experiments show that kinetic property does not significantly influence consumers' arousal or attention and, furthermore, can coexist with attribute information within ads without distraction. As such, it offers marketers a robust, subtle, and powerful mechanism to communicate product novelty.

Caveats, Limitations, and Further Research

Given our focus on explicating the process underlying the effect of kinetic property on novelty perceptions, our primary aim was in addressing the "most-likely-candidate" alternative explanations. Drawing on a review of the literature, we identified attention, ad vividness, anthropomorphism, affective reactions to the ad (A_{ad}), arousal, ad informativeness, and the ad's visual appearance as the most likely candidates and controlled for them and/or tested for their role as alternative explanations or additional predictors.

We also invested significant effort into examining the role of distraction as an alternative explanation because the distraction/attention lens has underscored previous theoretical examinations of animation. Across six studies, we tested for distraction effects by testing for differences in (1) self-reported attention, (2) encoding/recall of attribute information, and (3) the variance in responses (through Levene's test for equality of variance). Although distraction is a theoretically relevant and conceptually plausible alternative explanation, we find no differences across groups on all these measures, indicating that distraction, differential attention, and guessing are less likely to have played a role in explaining the pattern of results across studies. However, we also acknowledge that these measures are indirect and do not explicitly and directly capture how consumers visually process kinetic property. As such, an important limitation of this research is the lack of a direct measure of visual attention such as eye-tracking data.⁹ Because our process account is primarily an inferential one, we believe this limitation does not affect our interpretation as to the process underlying the effect of kinetic property, especially in light of confirmatory evidence from other measures that directly tap into the inferential process. Nevertheless, new research using eye-tracking technology could help clarify and extend this research significantly.

Kinetic property may be easily incorporated in various online multimedia platforms such as social media and mobile applications by virtue of its simplicity. However, we recommend caution in the use of this tactic, especially in contexts in which adaptation is likely. Firms may be better served by recruiting kinetic property in single-appearance web ads and ads in which placement is not embedded within a larger sequence of competing ads.

Finally, there may be other variables that this research does not take into account or contexts in which some of the alternative explanation variables we explore here may become consequential. For example, the effect of kinetic property could differ depending on advertising formats. In the current research, we presented ad stimuli as online advertisements that

primarily conveyed three or four main product attributes in a relatively short time frame (20–25 seconds). Would the positive effect for kinetic property be replicated if it were embedded in traditional television commercials? Because television advertising often aims at brand building, it tends to focus more on increasing brand awareness and recall (Draganska, Hartmann, and Stanglein 2014) rather than on enhancing visual effects. With this objective, in the case of television commercials, marketers may want to use visuals that deliver a relatively large amount of information coherently. Thus, to obtain the positive effect for kinetic property in traditional television commercials, the design of animations may need to be more sophisticated than that used in online advertising. In this sense, further research could examine the role played by coherence, quality, or pleasure/affect as moderators that shape the effect of kinetic property.¹⁰

In line with this discussion, whereas we focus on a visual perception-related aspect, future studies could explore how kinetic property interacts with other sensory modalities (e.g., auditory, haptic). The current research provides a springboard for new work on how multisensory communicative cues may interact with one another and when one input may dominate the others. As the consumer environment becomes more saturated with multimedia and multisensory inputs, understanding the role of kinetic property thus offers a useful theoretical lens for further research.

Appendix A: Dependent Measures and Covariates

Ad Liveliness

(Items anchored at 1 = "strongly disagree," and 7 = "strongly agree")

The ad you just saw appeared...

1. alive.
2. lively.
3. energetic.

Product Atypicality

(Items anchored at 1 and 7)

In my opinion, the product in the ad is...

1. common/unusual.
2. typical/not typical.

Product Novelty

(Items anchored at 1 and 7)

In my opinion, the product in the ad is...

1. old/new.
2. familiar/novel.
3. routine/fresh.

Purchase Intentions

(Items anchored at 1 and 7)

To me, buying the product in the ad is...

⁹We thank Reviewer 3 for this recommendation.

¹⁰We thank the area editor for this insight.

1. improbable/probable.
2. unlikely/likely.
3. impossible/possible.

Arousal

(Items anchored at 1 and 7)

How do you feel right now?

1. Passive/active.
2. Mellow/fired up.
3. Low energy/high energy.

Attention

(Items anchored at 1 = “strongly disagree,” and 7 = “strongly agree”)

1. I paid close attention to the ad.
2. I fully concentrated upon the ad.
3. I was deeply engrossed in the ad.

Attitudes Toward the Ad

(Items anchored at 1 and 7)

Please evaluate the advertisement that you saw earlier:

1. I dislike the advertisement/I like the advertisement.
2. In my opinion, the advertisement is bad/In my opinion, the advertisement is good.
3. I feel negative towards the advertisement/I feel positive towards the advertisement.

Ad Vividness

(Items anchored at 1 and 7)

Please rate the advertisement you saw earlier:

1. Not vivid/vivid.
2. Not specific/specific
3. Not concrete/concrete.
4. Not detailed/detailed.

Anthropomorphism

(Items anchored at 1 = “strongly disagree,” and 7 = “strongly agree”)

1. It appears to have intention.
2. It appears to have free will.
3. It looks like a person.

Visual Appearance

(Items anchored at 1 = “strongly disagree,” and 7 = “strongly agree”)

1. I like the way the ad looks.
2. The ad is attractive.
3. The ad is aesthetically appealing.

Informativeness

(Items anchored at 1 = “strongly disagree,” and 7 = “strongly agree”)

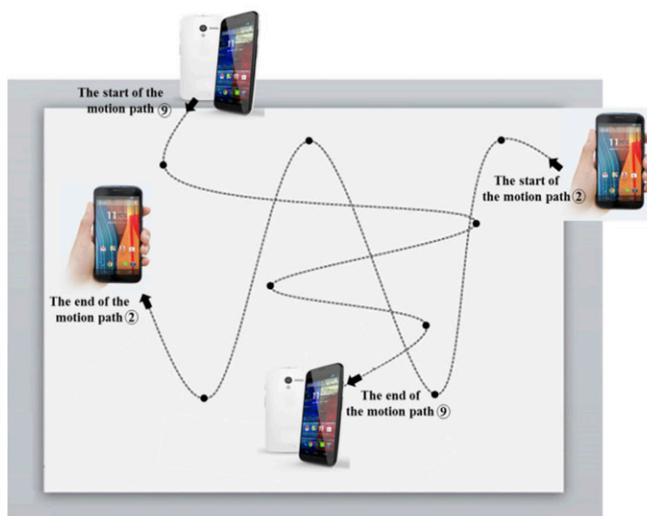
The ad is...

1. informative.
2. useful.
3. understandable.
4. sufficient.

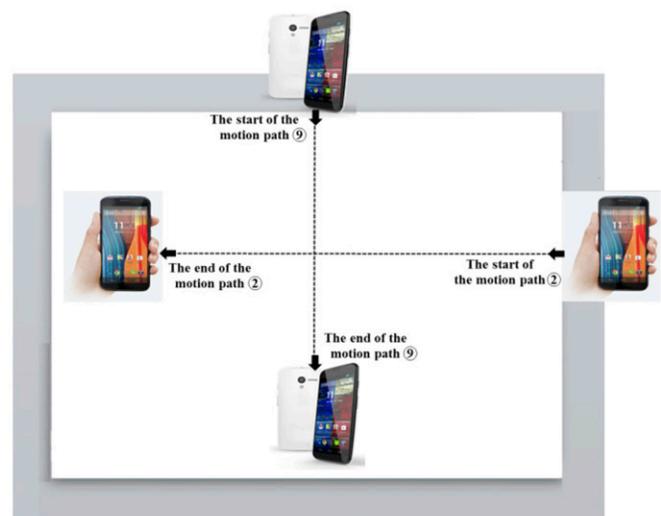
APPENDIX B Study 2 Ads

A: Motion-Path Description^a

High Kinetic Property Ad



Low Kinetic Property Ad



B: Final Screenshot of Ad^b



^aArrows describe the direction (from the start to the end of trajectory) of motion paths (of the ad elements 2 and 9). Each dot in the motion path of the high kinetic property ad indicates a point where each element changes direction on-screen.

^bNumbers indicate the order in which each visual element appears in the ad. This screenshot represents the end state of the ad.

REFERENCES

- Aaker, David A. and Robert Jacobson (2001), "The Value Relevance of Brand Attitude in High-Technology Markets," *Journal of Marketing Research*, 38 (November), 485–93.
- Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin*, 103 (3), 411–23.
- Bassili, John N. (1976), "Temporal and Spatial Contingencies in the Perception of Social Events," *Journal of Personality and Social Psychology*, 33 (6), 680–85.
- Berlyne, Daniel E. and L.C.C. Parham (1968), "Determinants of Subjective Novelty," *Perception & Psychophysics*, 3 (6), 415–23.
- Brasel, S. Adam and James Gips (2008), "Breaking Through Fast-Forwarding: Brand Information and Visual Attention," *Journal of Marketing*, 72 (November), 31–48.
- Campbell, Margaret C. and Kevin Lane Keller (2003), "Brand Familiarity and Advertising Repetition Effects," *Journal of Consumer Research*, 30 (2), 292–304.
- Chae, Boyoun Grace and JoAndrea Hoegg (2013), "The Future Looks 'Right': Effects of the Horizontal Location of Advertising Images on Product Attitude," *Journal of Consumer Research*, 40 (2), 223–38.
- Chaiken, Shelly and Durairaj Maheswaran (1994), "Heuristic Processing Can Bias Systematic Processing: Effects of Source Credibility, Argument Ambiguity, and Task Importance on Attitude Judgment," *Journal of Personality and Social Psychology*, 66 (3), 460–73.
- Chandy, Rajesh K. and Gerard J. Tellis (1998), "Organizing for Radical Product Innovation: The Overlooked Role of Willingness to Cannibalize," *Journal of Marketing Research*, 35 (November), 474–87.
- Cian, Luca, Aradhna Krishna, and Ryan S. Elder (2014), "This Logo Moves Me: Dynamic Imagery from Static Images," *Journal of Marketing Research*, 51 (April), 184–97.
- Cox, Anthony D., Dena Cox, and Susan Powell Mantel (2010), "Consumer Response to Drug Risk Information: The Role of Positive Affect," *Journal of Marketing*, 74 (July), 31–44.
- Cupchik, Gerald C. and Daniel E. Berlyne (1979), "The Perception of Collative Properties in Visual Stimuli," *Scandinavian Journal of Psychology*, 20 (1), 93–104.
- Dittrich, Winand H. and Stephen E.G. Lea (1994), "Visual Perception of Intentional Motion," *Perception*, 23 (3), 253–68.
- Draganska, Michaela, Wesley R. Hartmann, and Gena Stanglein (2014), "Internet Versus Television Advertising: A Brand-Building Comparison," *Journal of Marketing Research*, 51 (October), 578–90.
- eMarketer (2013), "Which Content Marketing Tactics Get the Best ROI?" (March 5), (accessed September 11, 2015), [available at <http://www.emarketer.com/Article/Which-Content-Marketing-Tactics-Best-ROI/1009706>].
- Folkes, Valerie and Shashi Matta (2004), "The Effect of Package Shape on Consumers' Judgments of Product Volume: Attention as a Mental Contaminant," *Journal of Consumer Research*, 31 (2), 390–401.
- Fornell, Claes and David F. Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18 (February), 39–50.
- Gao, Tao, Gregory McCarthy, and Brian J. Scholl (2010), "The Wolfpack Effect: Perception of Animacy Irresistibly Influences Interactive Behavior," *Psychological Science*, 21 (12), 1845–53.
- Gati, Itamar and Gershon Ben-Shakhar (1990), "Novelty and Significance in Orientation and Habituation: A Feature-Matching Approach," *Journal of Experimental Psychology. General*, 119 (3), 251–63.
- Goldstein, Daniel G., Siddharth Suri, R. Preston McAfee, Matthew Ekstrand-Abueg, and Fernando Diaz (2014), "The Economic and Cognitive Costs of Annoying Display Advertisements," *Journal of Marketing Research*, 51 (December), 742–52.

- Gourville, John T. (2006), "Eager Sellers and Stony Buyers: Understanding the Psychology of New-Product Adoption," *Harvard Business Review*, 84 (6), 98–106.
- Greenwald, Anthony G. and Clark Leavitt (1984), "Audience Involvement in Advertising: Four Levels," *Journal of Consumer Research*, 11 (1), 581–92.
- Guido, Gianluigi (2001), *The Salience of Marketing Stimuli: An Incongruity-Salience Hypothesis on Consumer Awareness*. Boston: Kluwer Academic Publishers.
- Hagtvedt, Henrik (2011), "The Impact of Incomplete Typeface Logos on Perceptions of the Firm," *Journal of Marketing*, 75 (July), 86–93.
- Hayes, Andrew F. (2012), "PROCESS: A Versatile Computational Tool for Observed Variable Mediation, Moderation, and Conditional Process Modeling," white paper, (accessed April 20, 2014), [available at <http://www.afhayes.com/public/process2012.pdf>].
- Hekkert, Paul, Dirk Snelders, and Piet C.W. van Wieringen (2003), "'Most Advanced, Yet Acceptable': Typicality and Novelty as Joint Predictors of Aesthetic Preference in Industrial Design," *British Journal of Psychology*, 94 (1), 111–24.
- Henard, David H. and David M. Szymanski (2001), "Why Some New Products Are More Successful Than Others," *Journal of Marketing Research*, 38 (August), 362–75.
- Hoeffler, Steve (2003), "Measuring Preferences for Really New Products," *Journal of Marketing Research*, 40 (November), 406–20.
- Holzwarth, Martin, Chris Janiszewski, and Marcus M. Neumann (2006), "The Influence of Avatars on Online Consumer Shopping Behavior," *Journal of Marketing*, 70 (October), 19–36.
- Interactive Advertising Bureau (2014), "IAB Internet Advertising Revenue Report: 2013 Full Year Results," research report, (April), (accessed September 11, 2015), [available at http://www.iab.net/media/file/IAB_Internet_Advertising_Revenue_Report_FY_2013.pdf].
- Janiszewski, Chris (1988), "Preconscious Processing Effects: The Independence of Attitude Formation and Conscious Thought," *Journal of Consumer Research*, 15 (2), 199–209.
- Jarvenpaa, Sirkka L. (1990), "Graphic Displays in Decision Making—The Visual Salience Effect," *Journal of Behavioral Decision Making*, 3 (4), 247–62.
- Keller, Punam Anand and Lauren G. Block (1997), "Vividness Effects: A Resource-Matching Perspective," *Journal of Consumer Research*, 24 (3), 295–304.
- Kim, Sara and Ann L. McGill (2011), "Gaming with Mr. Slot or Gaming the Slot Machine? Power, Anthropomorphism, and Risk Perception," *Journal of Consumer Research*, 38 (1), 94–107.
- Krasner, Jon (2008), *Motion Graphic Design: Applied History and Aesthetic*. Boston: Focal Press.
- Loken, Barbara and James Ward (1990), "Alternative Approaches to Understanding the Determinants of Typicality," *Journal of Consumer Research*, 17 (2), 111–26.
- Lurie, Nicholas H. and Charlotte H. Mason (2007), "Visual Representation: Implications for Decision Making," *Journal of Marketing*, 71 (January), 160–77.
- MacInnis, Deborah J. and Bernard J. Jaworski (1989), "Information Processing from Advertisements: Toward an Integrative Framework," *Journal of Marketing*, 53 (October), 1–23.
- MacKenzie, Scott B., Richard J. Lutz, and George E. Belch (1986), "The Role of Attitude Toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research*, 23 (May), 130–43.
- Maltz, Elliot and Ajay K. Kohli (1996), "Market Intelligence Dissemination Across Functional Boundaries," *Journal of Marketing Research*, 33 (February), 47–61.
- Marketing Science Institute (2014), "2014–2016 Research Priorities," (accessed September 11, 2015), [available at http://www.msi.org/uploads/files/MSI_RP14-16.pdf].
- McLeod, Peter, Jon Driver, and Jennie Crisp (1988), "Visual Search for a Conjunction of Movement and Form Is Parallel," *Nature*, 331 (6160), 154–55.
- Messaris, Paul (1997), *Visual Persuasion: The Role of Images in Advertising*. Thousand Oaks, CA: Sage Publications.
- Meyers-Levy, Joan (1989), "Priming Effects on Product Judgments: A Hemispheric Interpretation," *Journal of Consumer Research*, 16 (1), 76–86.
- Milosavljevic, Milica, Vidhya Navalpakkam, Christof Koch, and Antonio Rangel (2012), "Relative Visual Saliency Differences Induce Sizable Bias in Consumer Choice," *Journal of Consumer Psychology*, 22 (1), 67–74.
- Min, Sungwook, Manohar U. Kalwani, and William T. Robinson (2006), "Market Pioneer and Early Follower Survival Risks: A Contingency Analysis of Really New Versus Incrementally New Product-Markets," *Journal of Marketing*, 70 (January), 15–33.
- Mizik, Natalie and Robert Jacobson (2008), "The Financial Value Impact of Perceptual Brand Attributes," *Journal of Marketing Research*, 45 (February), 15–32.
- Moreau, C. Page, Arthur B. Markman, and Donald R. Lehmann (2001), "What Is It? Categorization Flexibility and Consumers' Responses to New Products," *Journal of Consumer Research*, 27 (4), 489–98.
- Mugge, Ruth and Darren W. Dahl (2013), "Seeking the Ideal Level of Design Newness: Consumer Response to Radical and Incremental Product Design," *Journal of Product Innovation Management*, 30 (S1), 34–47.
- Mukherjee, Ashesh and Wayne D. Hoyer (2001), "The Effect of Novel Attributes on Product Evaluation," *Journal of Consumer Research*, 28 (3), 462–72.
- Navon, David (1977), "The Forest Before Trees: The Precedence of Global Features in Visual Perception," *Cognitive Psychology*, 9 (3), 353–83.
- Nelson, Leif D., Tom Meyvis, and Jeff Galak (2009), "Enhancing the Television-Viewing Experience Through Commercial Interruptions," *Journal of Consumer Research*, 36 (2), 160–72.
- Orth, Ulrich R. and Keven Malkewitz (2008), "Holistic Package Design and Consumer Brand Impressions," *Journal of Marketing*, 72 (May), 64–81.
- Peracchio, Laura A. and Joan Meyers-Levy (2005), "Using Stylistic Properties of Ad Pictures to Communicate with Consumers," *Journal of Consumer Research*, 32 (1), 29–40.
- Petty, Richard E., John T. Cacioppo, and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10 (2), 135–46.
- Pieters, Rik, Michel Wedel, and Rajeev Batra (2010), "The Stopping Power of Advertising: Measures and Effects of Visual Complexity," *Journal of Marketing*, 74 (September), 48–60.
- Podsakoff, Philip M., Scott B. MacKenzie, Jeong-Yeon Lee, and Nathan P. Podsakoff (2003), "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology*, 88 (5), 879–903.
- Puccinelli, Nancy M., Keith Wilcox, and Dhruv Grewal (2015), "Consumers' Response to Commercials: When the Energy Level in the Commercial Conflicts with the Media Context," *Journal of Marketing*, 79 (March), 1–18.
- Rauschenberger, Robert (2003), "When Something Old Becomes Something New: Spatiotemporal Object Continuity and Attentional Capture," *Journal of Experimental Psychology. Human Perception and Performance*, 29 (3), 600–15.

- Rubera, Gaia and Ahmet H. Kirca (2012), "Firm Innovativeness and Its Performance Outcomes: A Meta-Analytic Review and Theoretical Integration," *Journal of Marketing*, 76 (May), 130–47.
- Santos, Natacha S., Nicole David, Gary Bente, and Kai Vogeley (2008), "Parametric Induction of Animacy Experience," *Consciousness and Cognition*, 17 (2), 425–37.
- Scholl, Brian J. and Tao Gao (2013), "Perceiving Animacy and Intentionality: Visual Processing or Higher-Level Judgment," in *Social Perception: Detection and Interpretation of Animacy, Agency, and Intention*, M.D. Rutherford and Valerie A. Kuhlmeier, eds. Cambridge, MA: MIT Press, 197–229.
- and Patrice D. Tremoulet (2000), "Perceptual Causality and Animacy," *Trends in Cognitive Sciences*, 4 (8), 299–309.
- Schumann, Jan H., Florian von Wangenheim, and Nicole Groene (2014), "Targeted Online Advertising: Using Reciprocity Appeals to Increase Acceptance Among Users of Free Web Services," *Journal of Marketing*, 78 (January), 59–75.
- Sorescu, Alina B., Rajesh K. Chandy, and Jaideep C. Prabhu (2003), "Sources and Financial Consequences of Radical Innovation: Insights from Pharmaceuticals," *Journal of Marketing*, 67 (October), 82–102.
- and Jelena Spanjol (2008), "Innovation's Effect on Firm Value and Risk: Insights from Consumer Packaged Goods," *Journal of Marketing*, 72 (March), 114–32.
- Sundar, Aparna and Theodore J. Noseworthy (2014), "Place the Logo High or Low? Using Conceptual Metaphors of Power in Packaging Design," *Journal of Marketing*, 78 (September), 138–51.
- Tremoulet, Patrice D. and Jacob Feldman (2000), "Perception of Animacy from the Motion of a Single Object," *Perception*, 29 (8), 943–51.
- Tversky, Amos (1977), "Features of Similarity," *Psychological Review*, 84 (4), 327–52.
- Wagemans, Johan, James H. Elder, Michael Kubovy, Stephen E. Palmer, Mary A. Peterson, Manish Singh, et al. (2012), "A Century of Gestalt Psychology in Visual Perception: I. Perceptual Grouping and Figure-Ground Organization," *Psychological Bulletin*, 138 (6), 1172–217.
- Whitfield, T.W. Allan and Philip E. Slatter (1979), "The Effects of Categorization and Prototypicality on Aesthetic Choice in a Furniture Selection Task," *British Journal of Psychology*, 70 (1), 65–75.
- Yoo, Chan Yun and Kihan Kim (2005), "Processing of Animation in Online Banner Advertising: The Roles of Cognitive and Emotional Responses," *Journal of Interactive Marketing*, 19 (4), 18–34.
- Ziamou, Paschalina and S. Ratneshwar (2003), "Innovations in Product Functionality: When and Why Are Explicit Comparisons Effective?" *Journal of Marketing*, 67 (April), 49–61.