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The authors propose that static visuals can evoke a perception of movement (i.e., dynamic imagery) and thereby affect consumer engagement and attitudes. Focusing on brand logos as the static visual element, the authors measure the perceived movement evoked by the logo and demonstrate that the evoked dynamic imagery affects the level of consumer engagement with the brand logo. They measure consumer engagement through both self-report measures and eye-tracking technology and find that engagement affects consumer attitudes toward the brand. The authors also show that the perceived movement–engagement–attitude effect is moderated by the congruence between perceived movement and brand characteristics. These findings suggest that dynamic imagery is an important aspect of logo design, and if used carefully, it can enhance brand attitudes.

Keywords: dynamic imagery, logo design, brand attitudes, engagement, perceived movement

This Logo Moves Me: Dynamic Imagery from Static Images

With the plethora of brands in the marketplace, marketers use many different means to engage consumers with their brands. For example, when they design advertisements, they often use celebrity spokespeople or beautiful models, or they may utilize humor, drama, and even fear appeals to keep the consumer absorbed. In this article, we propose and demonstrate another means of increasing consumer engagement with marketing communications. We show that (static) visuals that generate more dynamic imagery result in greater consumer engagement than those that evoke less dynamic imagery. By “dynamic imagery,” we mean an image the viewer perceives to have a sense of movement.

Take, for example, the statue of a jackal in Figure 1. This ancient Egyptian sculpture (ca. 3300–3100 B.C.E.) is set apart from other artwork of the period because of its separated front legs and lifted tail. The jackal, frozen in stride, conveys a sense of movement that enables it to stand as an active guardian of the tomb. For more than 5,000 years, artists have used various techniques to evoke a sense of

dynamism from static elements (through paintings or statues); however, scholars have not yet explored the consequences of such dynamism. Research in cognitive psychology and consumer behavior has focused on the antecedents of perceived motion but not on its downstream consequences. We explore the impact of static images on generating the perception of movement and examine the effects of such evoked dynamism.

We specifically focus on brand logos and their impact on consumer attitudes toward brands. Logos have become increasingly important not only as a way to capture awareness but also as a means of communicating with consumers because they are frequently the first exposure consumers have to a brand or company. Moreover, firms are increasingly presenting logos in various marketing communications with little or no copy, making the visual element of a logo even more important. For example, the brand logo can appear on the product itself, in banner ads, in small, single-column inch ads, on product packaging, and in many other ways. Thus, a logo becomes a visual signature for the brand (Snyder 1993) responsible for conveying the brand’s personality (Zakia and Nadin 1987). Companies and organizations undoubtedly understand the importance of logos, expending substantial amounts of money to ensure the proper visual representation. For example, the oil company BP Amoco invested £136 million (Davies and Paterson 2000), Pepsi spent \$1 million (Edwards 2008), and the Lon-

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Figure 1
 STATUE OF A JACKAL (CA. 3300–3100 B.C.E.)



Image source: Phoebe A. Hearst Museum of Anthropology, University of California, Berkeley.

don Olympics paid £400,000 (Hardy 2012) for their new logos.

We propose that static brand logos can result in the perception of movement, which affects the level of consumer engagement with the brand logo and ultimately influences consumer attitudes toward the brand. In addition, we show that this perceived movement–engagement–attitude effect is moderated by the fit of perceived movement with brand characteristics.

We begin by discussing literature pertinent to our research. We then build the conceptual framework for our hypothesized effects and describe six studies in detail. We conclude by addressing specific contributions of the research and presenting suggested future research directions in this area.

PRIOR LITERATURE AND CONCEPTUAL FRAMEWORK

Prior Literature

Literature relevant to our research has focused on the areas of static versus dynamic imagery, antecedents of perceived movement, visual elements that increase consumer engagement, and brand logos. We briefly discuss each in turn.

Static versus dynamic imagery. Previous works have defined static imagery as the brain’s ability to generate representations of stationary and fixed objects. These representations facilitate figure recognition and judgment about the objects’ visual properties. In contrast, dynamic imagery is the brain’s ability to generate representations of moving objects, facilitating the simulation of transformations, rotations, and reorganizations of imagined information (Clark and Paivio 1991; Harshman and Paivio 1987; Thomas and

Mulligan 1995). Thus, internalized motor processes enable perceptions of movement in static visual cues that have a dynamic quality (e.g., a static picture of a running animal could seem to be actually running).

Antecedents of perceived movement. The fields of art and design, cognitive psychology, and consumer behavior have all focused on antecedents of perceived movement. The art and design literature notes movement or dynamism as one element of visual grammar (Leborg 2006) along with other elements such as color, shape, and texture (Dondis 1974). Several methods have been used in art to convey such movement. One of the most common methods is to capture a moving figure in the midst of motion (“frozen motion”), as in *Statue of a Jackal*, mentioned previously, or in Michelangelo’s *Creation of Adam* (ca. 1511), in which the focal point is the contact between the fingers of God and Adam. The fingers are not yet touching, frozen in motion, thus giving the impression of movement (see Figure 2).

Within cognitive psychology as well, some researchers have studied how a picture with “frozen motion” can induce a sense of movement (Freyd 1983; Reed and Vinson 1996; Vinson and Reed 2002). In addition to frozen motion, research has shown “visual friction,” or the amount of contact between graphic elements, to change perceived motion. Increased contact between visual cues and increased friction have been shown to decrease perceived movement (Hubbard 1995; Kerzel 2002). In other words, the perceived movement of a visual object reduces when it appears to slide along, clash against, or touch another visual object.

Within consumer behavior research, Peracchio and Meyers-Levy (2005) show that dynamism is one type of visual stylistic property that can be conveyed through camera angle. For example, greater dynamism is implied if the forearm of a person wearing a wristwatch with her hand in her pocket

Figure 2
MICHELANGELO'S *CREATION OF ADAM* (CA. 1511)

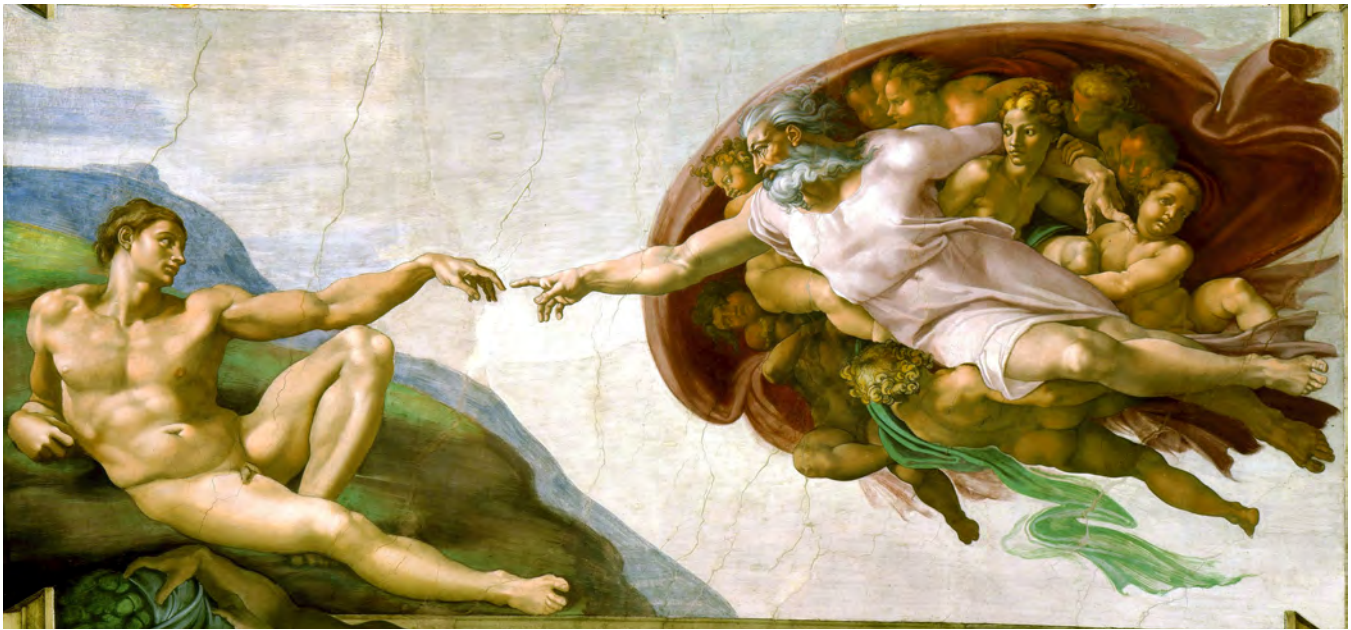


Image source: Wikimedia Commons.

is diagonal versus vertical. Peracchio and Meyers-Levy focus their attention on the synergy between the ad copy and the visual and not on measuring perceived movement of the visual or its downstream consequences.

Visual elements that increase consumer engagement. An increasing body of literature explores the impact of visual cues on persuasion (e.g., Mitchell and Olson 1981; Peracchio and Meyers-Levy 2005; Scott 1994). Visual cues specifically affect attention and consumer engagement (Finn 1988; Pieters and Wedel 2004; Pieters, Wedel, and Batra 2010).

Recent advances in eye-tracking technology have facilitated a better understanding of how visual cues capture and transfer attention within an ad (e.g., Pieters and Wedel 2004; Pieters, Wedel, and Batra 2010). Both the picture and the brand element of the ad (i.e., the logo) are effective in garnering attention. Specifically, Pieters and Wedel (2004) show that the pictorial element within an ad is the most effective element in capturing overall attention as measured by eye fixation and duration, but the brand element is most successful in transferring attention to the other elements of the ad. Thus, the impact of the visual components of advertising, especially in driving attention and engagement, underscores the importance of logos in the persuasive process.

Brand logos. The contribution of logos to brand building, as well as their impact on consumer behavior, remains an important research area (Hagtvedt 2011; Keller and Lehmann 2006). Much of the prior literature has studied logo characteristics and their impact on memory or affect (e.g., Henderson and Cote 1998; Janiszewski and Meyvis 2001; Van der Lans et al. 2009; Vartorella 1990), and other research has explored the impact of logos on perceptions of the company or brand (Schechter 1993; Stafford, Tripp, and

Bienstock 2004). Focusing on the latter, Hagtvedt (2011) shows that logos have the potential to convey meaning on their own such that an incomplete (complete) logo leads to lower (higher) perceptions of trustworthiness and higher (lower) perceptions of innovativeness. Thus, the importance of a logo is much more than a mere visual signature because it serves as a vehicle for capturing attention and conveying meaning (see also Janiszewski and Meyvis 2001).

In a systematic examination of the effect of design characteristics on logo evaluations, Henderson and Cote (1998) create a list of key factors in logo design that influence recognition, affect, and meaning. Of particular interest to us is the “elaborate” factor, which includes an item’s complexity, depth, and activeness. “Activeness” is defined as the logo’s capability to “give the impression of motion or flow” (Henderson and Cote 1998, p. 17). This characteristic within logo design therefore coincides with dynamism in the art and design literature. However, neither Henderson and Cote (1998) nor follow-up research (e.g., Henderson et al. 2003; Olavarrieta and Friedmann 2007; Van der Lans et al. 2009) has explored activeness in isolation, either in terms of its ability to evoke dynamism or its consequences for consumers.

Conceptual Framework

Perceived movement, engagement, and attitudes toward the brand. We argue that a static visual cue should increase engagement to the same extent that it conveys dynamic imagery. It is clear that actual movement would capture more attention and be more engaging than no movement at all. However, the concept of “hedonistic aesthetics” suggests that the more viewers “play” with the image in their minds, the more they will experience active engagement (Barthes 1971). Similarly, Lutz and Lutz (1978, p. 616) sug-

gest that “the power of the human imagination is vast and may supersede any advertiser-provided stimulus in being personally relevant ... to the consumer.” Thus, greater dynamic imagery that consumers themselves perceive from static visuals should result in greater consumer engagement.

In the context of visual cues, “engagement” is typically defined as the maintenance of attention to a selected object, resulting in longer gaze durations as well as increased refixations on the object (Pieters and Wedel 2007; Teixeira, Wedel, and Pieters 2012). Building on this definition, we hypothesize that perceived movement, which evokes dynamic imagery, should draw observers’ eyes back to the visual as they imagine the movement. Therefore, a static logo that evokes more dynamic imagery should lead to greater engagement with the logo than a logo with lower dynamism, meaning that the observer will attend to the logo longer and refixate on it more as well. Gaze duration and number of fixations then represent implicit measures of engagement.

Ultimately, feelings of engagement affect persuasion (Karmarkar and Tormala 2010; Lee, Keller, and Sternthal 2010; Wang and Calder 2009). Karmarkar and Tormala (2010) show that increased engagement with a strong argument positively affects attitudes. Similarly, Lee, Keller, and Sternthal (2010) show that engagement has a direct effect on attitudes toward the brand, with higher engagement leading to more favorable brand attitudes. Within an advertising context, Wang and Calder (2009) find that engagement positively affected attitudes toward the ad only when it was triggered by nonintrusive forms of persuasion. In summary, engagement plays an important role in determining attitudes. We anticipate that engagement with dynamic imagery will lead to greater positive attitudes toward the brand.

Interaction of evoked dynamism with other brand characteristics. Although higher (vs. lower) logo dynamism can lead to increases in perceived movement, higher engagement, and more positive attitudes toward the brand, this may not always be the case. In some situations, such as when greater dynamism is inconsistent with the brand in some way, the evoked dynamism may have a negative impact on attitudes toward the brand. For example, a brand characterized by modernity symbolizes dynamism at a metaphorical level—the brand has evolved and *moved* with the times. The brand, therefore, is congruent with the movement implied by the logo. However, a brand characterized as more traditional symbolizes a static nature at a metaphorical level—the brand is unchanging and does *not* move.

We propose that the congruence between the level of logo dynamism and brand characteristics will have an impact on brand evaluation and that fluency will drive this impact (Reber, Schwarz, and Winkielman 2004). Greater conceptual fluency will arise from higher congruence between the level of logo dynamism and the characteristics of the brand. Prior work has shown more positive attitudes toward more conceptually fluent sets of stimuli (Lee and Labroo 2004; Torelli and Ahluwalia 2012). In our context, greater congruence between logo dynamism and brand characteristics that results in greater conceptual fluency should then lead to higher brand evaluation—perhaps because the higher fluency yields a “feels right” experience, and this feeling is misattributed to the brand.

Drawing on the preceding literature, we hypothesize the following:

H₁: A logo that evokes greater perceived movement (logo dynamism) generates more favorable attitudes toward the brand, unless the perceived movement is incongruent with the brand characteristics.

H₂: The impact of logo dynamism on attitudes toward the brand is mediated by engagement.

We propose that congruence will moderate the effect of logo on attitudes toward the brand *after* engagement. As H₂ suggests, the dynamism of the logo will affect engagement. We hypothesize that this initial path occurs independent of brand information. However, Higgins (2006, p. 451) notes that “when people experience strong engagement with something, they are involved, occupied, interested and attentive to it,” making brand characteristics more salient following engagement. Thus, a match between brand characteristics and dynamic imagery should lead to more favorable attitudes toward the brand than a mismatch. Specifically, a company characterized by modernity should benefit from a logo that evokes more dynamism, whereas a company characterized by traditionalism should benefit from a logo that evokes less dynamism.

In Study 1, we show how dynamism within a logo can affect attitudes toward the brand. Next, in Studies 2a and 2b, we introduce consumer engagement as a mediator for the impact of perceived dynamism on attitude. In Study 3, we examine the moderating impact of the metaphorical fit between logo dynamism and brand characteristics on brand attitudes. In Study 4, we study the effect of forward (backward) movement and its metaphorical match with modernity (traditionalism). Finally, in Study 5, we find support for an implicit measurement of engagement using eye-tracking technology.

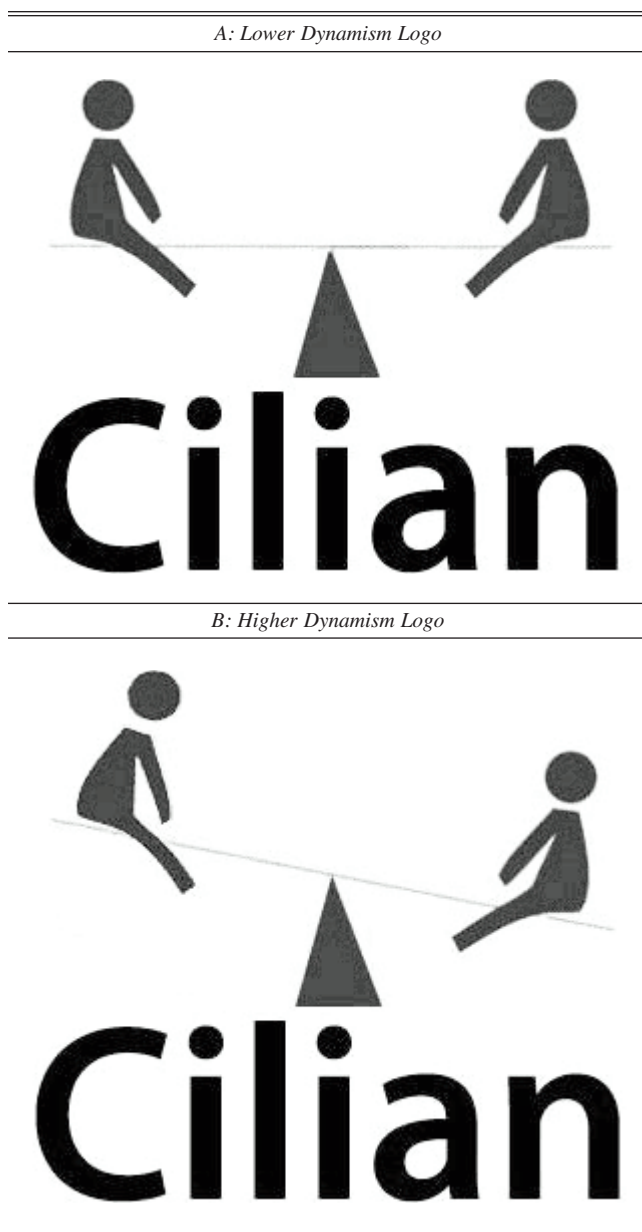
STUDY 1 (SEESAW): EVOKED DYNAMISM AND ATTITUDES

Stimuli and Pretest

We created two versions of a logo for a fictitious brand, “Cilian.” The lower dynamism logo contained a simplistic drawing of a seesaw in a horizontal position, or at equilibrium (Figure 3, Panel A). The higher dynamism logo contained an identical drawing, except that the seesaw was at a diagonal angle, using the notion of frozen motion to imply movement (Figure 3, Panel B).

We conducted a pretest to ensure that the lower and higher dynamism logos did not differ on relevant dimensions other than implied motion. One hundred twelve undergraduate students from a large university in the midwestern United States participated in the pretest. Participants were told that they would be rating a logo on several dimensions. Each participant was randomly assigned to view one of two logos. They were allowed to view the logo for as long as they wanted. Participants then rated the logo on its visual appearance, visual complexity, informativeness, familiarity, and novelty (nine-point scales; for details, see the Appendix). There were no significant differences between the two logos (all $ps > .5$) for visual appearance ($M_{\text{lower dynamism}} = 4.62$, $M_{\text{higher dynamism}} = 4.47$), visual complexity ($M_{\text{lower dynamism}} = 3.71$, $M_{\text{higher dynamism}} = 3.81$), informativeness ($M_{\text{lower dynamism}} = 3.05$, $M_{\text{higher dynamism}} = 3.04$), familiarity

Figure 3
LOGOS USED IN STUDY 1



($M_{\text{lower dynamism}} = 2.54$, $M_{\text{higher dynamism}} = 2.62$), or novelty ($M_{\text{lower dynamism}} = 4.36$, $M_{\text{higher dynamism}} = 4.55$). Following these measures, participants were asked to rate the perceived movement of the logo. We constructed a two-item scale to measure perceived movement: “How much movement did you see in the logo for the company?” (1 = “no movement at all,” and 9 = “a lot of movement”), and “How dynamic was the logo?” (1 = “not at all dynamic,” and 9 = “extremely dynamic”; $r = .84$, $p < .01$). As expected, we found a significant difference between the logos on our measure of perceived movement ($M_{\text{lower dynamism}} = 4.12$, $M_{\text{higher dynamism}} = 5.43$; $F(1, 110) = 11.79$, $p < .01$).

Note that in this and the following studies, ratings for perceived movement from the higher dynamism logo did not reach the highest points of our nine-point scale. We asked participants how much movement and dynamism they saw

in the logos, and yet we acknowledge that these images are still static visuals. In a world full of fast animations and hectic motions, it is unlikely that a static visual would generate enough perceived motion to be classified as “extremely dynamic.”

Main Study

Seventy-four undergraduate students from a large university in the western United States completed Study 1 in exchange for course credit. Participants were told that they would be evaluating logos. After each participant viewed one of the two pretested logos, they rated their overall attitude toward the brand (1 = “bad/dislike/unpleasant,” and 9 = “good/like/pleasant”; $\alpha = .96$; Mitchell and Olson 1981). We also performed a manipulation check: after the indicating their attitudes toward the brand, participants rated the perceived movement of the logo ($r = .65$, $p < .01$). We also captured participants’ gender; however, gender was not a significant covariate in any of the studies (all $ps > .2$), so we do not discuss it further.

Results and Discussion

Manipulation check: perceived movement. Replicating the results from our pretest, the two logos differ in level of perceived movement ($M_{\text{lower dynamism}} = 4.18$, $M_{\text{higher dynamism}} = 5.47$; $F(1, 72) = 12.61$, $p < .01$), with higher logo dynamism leading to more perceived movement than lower logo dynamism. In the rest of the studies as well, perceived movement measured in the main study replicated the results of the pretests; therefore, for brevity, we do not report the results for perceived movement in the other studies.

Attitudes toward the brand. We next conducted a similar analysis with attitudes toward the brand as the dependent variable. As we anticipated, there was a significant impact of logo dynamism on attitudes toward the brand ($M_{\text{lower dynamism}} = 4.75$, $M_{\text{higher dynamism}} = 5.58$; $F(1, 72) = 5.26$, $p < .05$), with higher logo dynamism leading to more favorable attitudes than the lower dynamism logo.

Study 1 supports our primary hypothesis (H_1), showing the consequential impact of perceived movement on evaluative measures: the dynamic imagery generated by simply inclining the bar of the seesaw logo increased favorable attitudes toward the brand. In the next study, we focus on the process behind this effect and test whether engagement mediates the effect of logo on attitude (H_2).

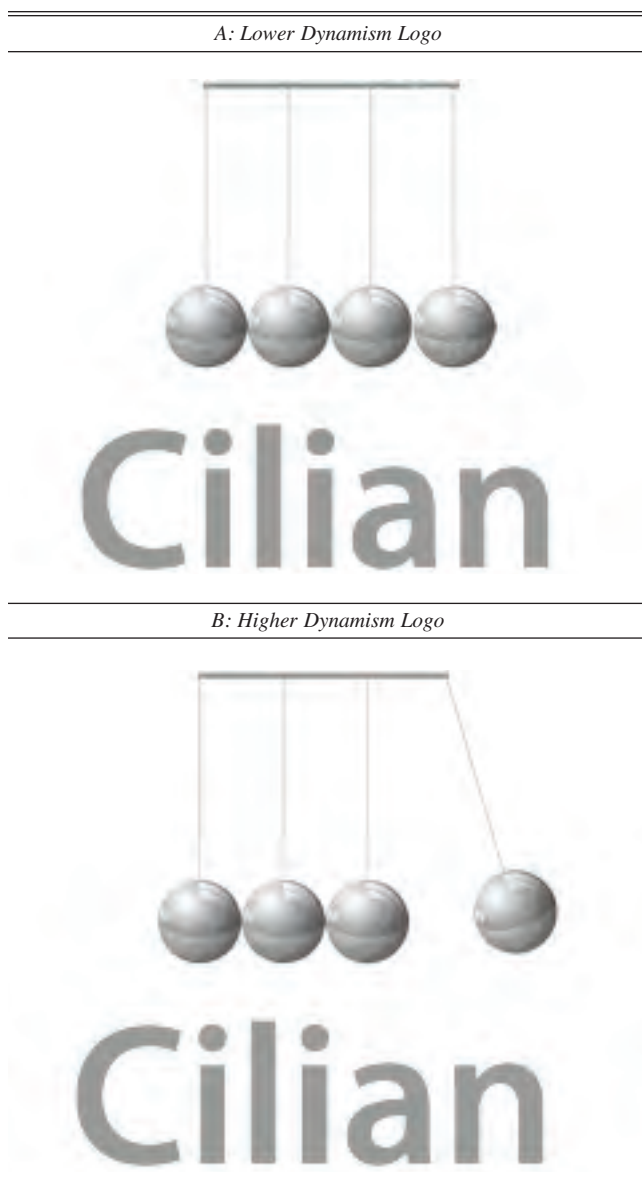
STUDY 2 (NEWTON’S CRADLE AND HORSE): MEDIATION THROUGH ENGAGEMENT

We anticipate that higher dynamism in a logo will increase engagement with the logo, ultimately leading to more favorable attitudes toward the brand (H_2). We test this hypothesis in two progressive studies, capturing perceived motion through frozen motion, using a Newton’s cradle logo (Study 2a), and through friction, using a horse logo (Study 2b). Together, the two studies provide greater generalizability of our results.

Study 2a (Newton’s Cradle): Frozen Motion

The logos used in Study 2a were line drawings of Newton’s cradle. In the lower logo dynamism condition, all the balls are in the same position (Figure 4, Panel A). However, in the higher logo dynamism condition, the ball on the far

Figure 4
LOGOS USED IN STUDY 2A



end is elevated, giving the impression of frozen motion (Figure 4, Panel B). The two logos differed only in the inclination of the last ball.

Pretest. A pretest similar to that used for Study 1 conducted with 110 undergraduate students from a large midwestern university revealed no significant difference between the two logos (all $ps > .1$) on visual appearance, visual complexity, informativeness, familiarity, or novelty. As we expected, however, perceived movement differed between the two logos ($M_{\text{lower dynamism}} = 3.13$, $M_{\text{higher dynamism}} = 4.96$; $F(1, 108) = 25.62$, $p < .01$).

Main study. The procedure and measures for Study 2a closely follow those used in Study 1. Sixty-four students from a large university in the western United States participated in the experiment in exchange for course credit. Participants were randomly assigned to view one of the two logos for as long as they wanted. After viewing the logos,

they rated their attitudes toward the brand ($\alpha = .95$) and perceived movement of the logo ($r = .61$, $p < .01$), as in Study 1. To measure engagement with the logo, we adapted two prior engagement scales (Lefebvre et al. 2010; O'Brien and Toms 2009). Our resulting scale comprised four items measuring how involving, engaging, boring, and stimulating the logo was ($\alpha = .86$). We measured all items on nine-point scales (1 = "not at all," and 9 = "extremely"; the "boring" item was reversed). The ordering of the questions began with attitudes, proceeded to engagement, and concluded with perceived movement.

Study 2a Results and Discussion

Engagement and attitudes toward the brand. We conducted a series of analyses of variance (ANOVAs) on our dependent measures. An ANOVA with logo dynamism as the independent variable and engagement as the dependent variable revealed that higher dynamism logo led to significantly higher levels of engagement than did lower logo dynamism ($M_{\text{higher dynamism}} = 4.12$, $M_{\text{lower dynamism}} = 3.18$; $F(1, 62) = 6.10$, $p < .05$). Finally, an ANOVA examined the impact of logo dynamism on attitudes toward the brand, revealing that higher logo dynamism led to more favorable attitudes toward the brand than did lower logo dynamism ($M_{\text{higher dynamism}} = 4.94$, $M_{\text{lower dynamism}} = 3.83$; $F(1, 62) = 6.70$, $p < .05$), consistent with H_1 .

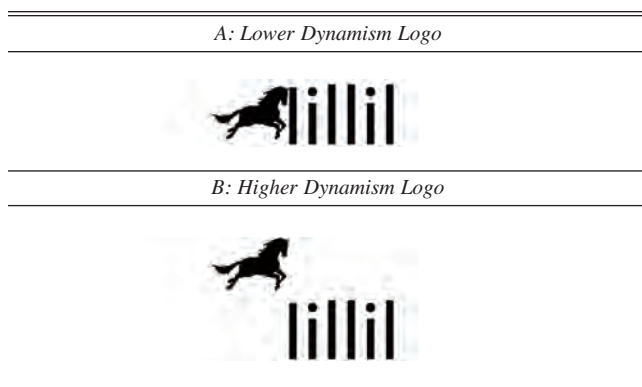
Mediation analysis. We propose that engagement mediates the effect of logo dynamism on attitudes toward the brand. We tested H_2 in a mediation analysis using the PROCESS macro based on Model 4, proposed by Preacher and Hayes (2008). Analyses conducted through bootstrapping (5,000 bootstrap samples) indicated indirect-only mediation (Zhao, Lynch, and Chen 2010), in support of H_2 . The total effect of logo dynamism on attitudes toward the brand was significant ($\beta = 1.11$, $t = 2.59$, $p < .05$), as previously reported. Controlling for logo dynamism, engagement had a significant and positive effect on attitudes toward the brand ($\beta = .79$, $t = 7.73$, $p < .01$). Controlling for engagement, logo dynamism no longer had a significant impact on attitudes toward the brand ($\beta = .37$, $t = 1.14$, $p > .2$). The indirect path of the effects of logo dynamism on attitudes toward the brand through engagement was significant, with the 95% confidence interval excluding zero (.17, 1.45).

Study 2b (Horse): Friction

In the previous studies, an inclined seesaw (Study 1) and an elevated ball (Study 2a) gave the impression of frozen motion—in other words, that movement was forthcoming, encouraging viewers to continue the movement in their minds. In Study 2b, we created perceived movement using "friction" (Hubbard 1995; Kerzel 2002) by placing a barrier on the (implicitly) moving portion of the logo. In the higher dynamism form of the logo, a horse is running unobstructed above the text of the logo (Figure 5, Panel A). In the lower dynamism form, the text of the logo obstructs the horse's path of movement, creating visual friction (Figure 5, Panel B). The only difference between the two logos is the position of the horse along the vertical axis.

Pretest. Similar to Study 2a, a pretest conducted with 171 undergraduate students from a large midwestern university revealed no significant difference (all $ps > .5$) between the two logos for visual appearance, visual complexity, infor-

Figure 5
LOGOS USED IN STUDY 2B



mativeness, familiarity, or novelty. Again, however, we found a significant difference on our measure of perceived movement ($M_{\text{lower dynamism}} = 4.58$, $M_{\text{higher dynamism}} = 5.37$; $F(1, 169) = 10.24$, $p < .01$).

Main study. One hundred seventy-four participants from an online panel observed one of the two logos for as long as they wanted. Aside from the logo, no other information was given. We next measured their attitudes toward the brand ($\alpha = .97$), engagement ($\alpha = .93$), and perceived movement ($r = .69$, $p < .01$) using the same items as in Study 2a.

Study 2b Results and Discussion

Engagement and attitudes toward the brand. A one-way ANOVA with logo dynamism as independent variable and engagement as dependent variable showed that higher logo dynamism led to significantly higher levels of engagement than did lower logo dynamism ($M_{\text{higher dynamism}} = 5.64$, $M_{\text{lower dynamism}} = 4.77$; $F(1, 172) = 9.53$, $p < .01$). Another one-way ANOVA tested the impact of logo on attitudes toward the brand. As in the prior studies, higher logo dynamism led to more favorable attitudes than did lower logo dynamism ($M_{\text{higher dynamism}} = 5.97$, $M_{\text{lower dynamism}} = 5.18$; $F(1, 172) = 8.88$, $p < .01$).

Mediation analysis. As in Study 2a, we found that engagement fully mediated the effect of logo dynamism on attitudes toward the brand. In the initial model, the total effect of logo dynamism on attitudes toward the brand was significant ($\beta = -.79$, $t = -2.98$, $p < .01$). In the mediational model, when controlling for logo dynamism, engagement had a significant and positive effect on attitudes toward the brand ($\beta = .73$, $t = 16.56$, $p < .01$). Controlling for engagement, logo dynamism no longer had a significant impact on attitudes toward the brand ($\beta = -.15$, $t = -.87$, $p > .3$). A 95% bootstrap confidence interval for the conditional indirect effect excludes zero ($-1.06, -.22$), confirming the indirect effect.

The results of Studies 2a and 2b support our initial hypothesis (H_1) as well as the mediating role of engagement (H_2) in our hypothesized model. Together, the two studies show that engagement's mediation of the effect of logo dynamism on attitudes is quite a robust process.

In Studies 1 and 2, we found that perceived dynamism has a positive impact on attitudes toward the brand. In Study 3, we explore whether there are boundary conditions for this effect.

STUDY 3 (ORCHESTRA): MODERATION BY CONGRUENCE

We have proposed that the congruence between evoked dynamism and desired characteristics of the brand moderates the effect of logo dynamism on attitudes toward the brand (H_1). In Study 3, we provide company descriptions that are either more traditional or more modern and explore the impact of more or less dynamic logos on attitudes toward the company. Presumably, a traditional company's desired characteristics will not be as compatible with dynamism as a modern company's will be, because the modern company should be perceived as changing, dynamic, and fast moving. Thus, a more (vs. less) dynamic logo may have a very different impact on attitudes for a traditional versus modern company, potentially prompting less favorable attitudes rather than enhancing favorable ones.

Pretest

We created two descriptions for an orchestra:

1. Traditional: Cilian orchestra is revered as one of the mainstays of the classical music arena. Rather than focus on adapting to today's music, Cilian remains firmly planted in the beloved music of the past.
2. Modern: Cilian orchestra is revered as one of the movers in the modern music arena. Rather than focus on sticking to yesterday's music, Cilian continually adapts to the beloved music of the future.

An online panel ($n = 27$) rated these descriptions on a modernity scale (1 = "very traditional," and 9 = "very modern"). The traditional description was characterized as more traditional ($M = 3.00$), whereas the modern description was characterized as more modern ($M = 6.85$; $F(1, 25) = 23.15$, $p < .01$). We used the same logos for Study 3 as we did for Study 2a (line drawings of Newton's cradle; Figure 4, Panels A and B).

Main Study

Study 3 employed a 2 (description: traditional, modern) \times 2 (logo dynamism: lower, higher) between-subjects design. One hundred seventy-four undergraduate students from a large midwestern university completed the study in exchange for course credit. Participants were told that they would be evaluating a logo for a music company. On the next screen, participants read the description of the company and then viewed the logo for as long as they wanted. After viewing the logo, participants answered evaluative measures about the company as in the prior studies (attitudes toward the brand, engagement, and perceived movement).

Results and Discussion

Engagement. An ANOVA conducted with engagement as the dependent variable and description and logo dynamism as the independent variables revealed a significant main effect of logo dynamism. Specifically, we found that higher logo dynamism led to significantly higher levels of engagement than did lower logo dynamism ($M_{\text{lower dynamism}} = 2.99$, $M_{\text{higher dynamism}} = 4.38$; $F(1, 170) = 41.21$, $p < .01$). Ultimately, there was no main effect of description ($p > .9$). However, there was a significant interaction between description and logo dynamism. Contrasts reveal that within the modern description condition, higher logo dynamism

led to significantly higher levels of engagement than did lower logo dynamism ($M_{\text{higher dynamism}} = 4.65$, $M_{\text{lower dynamism}} = 2.73$; $F(1, 170) = 40.27$, $p < .01$). Within the traditional description condition, we find the same pattern with a smaller (yet still significant) difference between higher and lower logo dynamism ($M_{\text{higher dynamism}} = 4.10$, $M_{\text{lower dynamism}} = 3.26$; $F(1, 170) = 7.58$, $p < .01$).

Attitudes toward the brand. We conducted an additional 2×2 ANOVA with description and logo dynamism as the independent variables and attitudes toward the brand as the dependent variable. Here, neither the main effect of description nor the main effect of logo dynamism was significant ($p > .2$). However, the interaction between the two factors was significant ($F(1, 170) = 10.21$, $p < .01$). Planned contrasts revealed that within the modern description condition, higher logo dynamism led to more favorable attitudes toward the brand than did lower logo dynamism ($M_{\text{higher dynamism}} = 5.11$, $M_{\text{lower dynamism}} = 4.25$; $F(1, 170) = 5.90$, $p < .05$). Within the traditional description condition, we found the opposite results, such that lower logo dynamism led to more favorable attitudes toward the brand than did higher logo dynamism ($M_{\text{lower dynamism}} = 5.36$, $M_{\text{higher dynamism}} = 4.60$; $F(1, 170) = 4.37$, $p < .05$).

Mediation analysis. Finally, we tested a model (see Figure 6) aimed to corroborate all our hypotheses and formally test our hypothesized moderated mediation model: logo dynamism affects engagement, which in turn affects attitudes toward the brand (H_2). The congruence between perceived movement and the desired characteristics of the brand moderates the effect of logo dynamism on attitudes toward the brand (H_1). We tested this moderated mediation

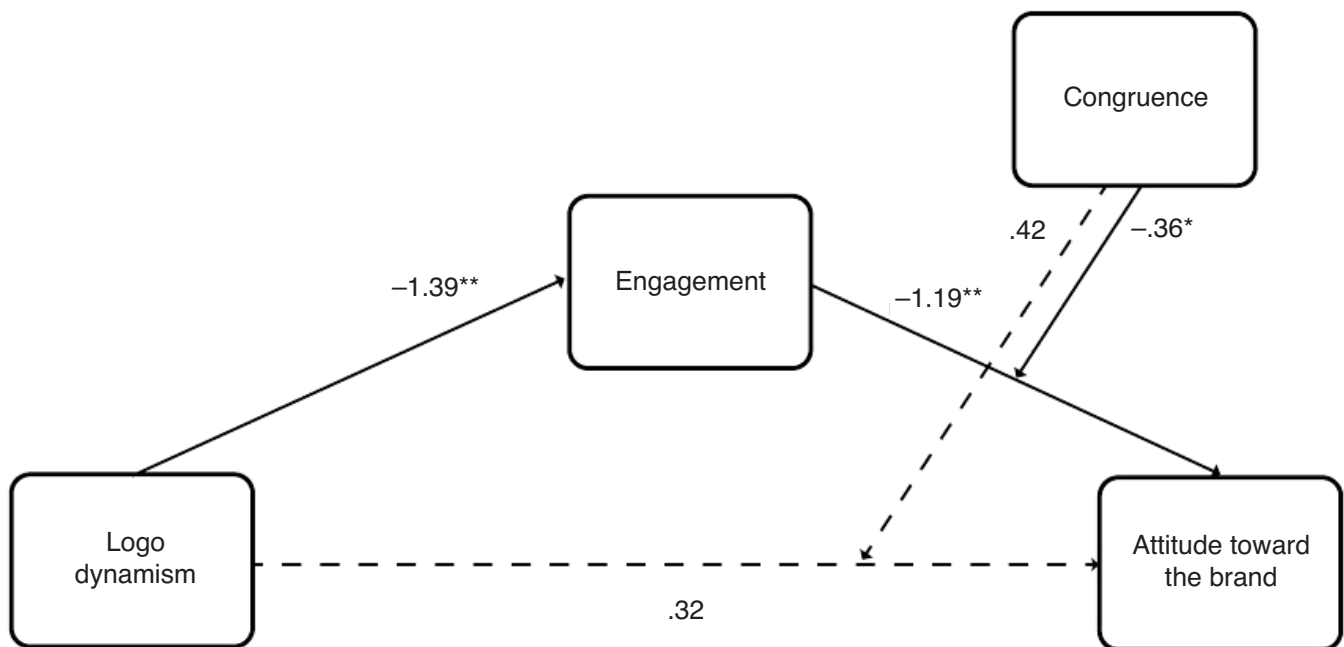
model using a bootstrapping mediation method with 5,000 resamples (Preacher, Rucker, and Hayes 2007). Specifically, we used PROCESS Model 15 (Hayes 2013), which allows for both moderated mediation and mediated moderation.

As we reported previously, the effect of logo dynamism (higher vs. lower) on engagement is significant ($t = -6.37$, $p < .01$). Controlling for logo dynamism in this model, the effect of engagement on attitudes toward the brand is significant ($t = 5.18$, $p < .01$); controlling for engagement, the direct effect of logo dynamism on attitudes toward the brand is no longer significant ($t = .42$, $p > .6$). Within the mediational model, the interaction of engagement and description on attitudes toward the brand is significant ($t = -2.42$, $p < .05$), whereas the interaction of logo dynamism and description on attitudes toward the brand is no longer significant ($t = .89$, $p > .3$). Finally, the indirect effect of perceived movement on attitudes toward the brand through engagement, moderated by congruence, is significant (with a 95% confidence interval between -1.05 and $-.36$ for the traditional description and -1.62 and $-.77$ for the modern description).

Together, these results show that the indirect effect of logo (higher vs. lower dynamism) on attitude mediated by engagement is significant and that description moderates this indirect effect. However, the direct route from logo to attitude is not significant, nor is its moderation by congruence.

In summary, our results suggest that the impact of engagement on attitudes is more positive when the logo and description are congruent than when they are incongruent. These findings highlight the notion that greater engagement does not always result in more positive attitudes. If the consumer is more engaged but the logo is incongruent with the

Figure 6
MODERATED MEDIATION MODEL OF LOGO ON ATTITUDE TOWARD THE BRAND



* $p < .05$.

** $p < .01$.

Notes: Numbers indicate beta values.

brand description, this incongruence is more likely to be noticed and attended to; thus, it may negatively influence attitudes (moderation). This happens in the case of the traditional orchestra—although the more dynamic logo increases engagement, it is also incongruent with the brand characteristic. The incongruence could conceivably just have a simple effect on attitude and (perhaps) negate the positive effect of dynamism; however, it seems that increased engagement makes the incongruence even more noticeable such that the higher dynamism logo leads to less favorable attitudes for the traditional orchestra compared with the lower dynamism logo.

The findings from Study 3 support our hypothesis that congruence between logo dynamism and the company establishes one boundary condition for the effects of logo dynamism on attitudes. Importantly, these findings provide additional process support for our model. We further explore the impact of congruence between logo dynamism and brand characteristics in Study 4.

STUDY 4 (FASHION): DIRECTION OF MOVEMENT AND CONGRUENCE

In Study 3, we focused on a metaphorical link between logo dynamism and modernity (i.e., perceived movement and modernity). In Study 4, we explore another metaphorical link: direction of movement and modernity. To do so, we created ads for a company that contained both the logo and the verbal copy. As in Study 3, the descriptions of the company are either more traditional or more modern. If direction has a metaphorical connotation, a metaphorical match between logo direction and company description (forward movement/modern company or backward movement/traditional company) should lead to more favorable attitudes toward the brand than should a metaphorical mismatch (backward movement/modern company or forward movement/traditional company).

Stimuli and Pretests

We created four versions of an ad for a fictitious fashion wool brand, “EE.” In two of these ads, the man seems to be moving backward (from right to left; Figure 7, Panels A and D); in the other two, the man in the logo seems to be moving forward (from left to right; Figure 7, Panels B and C). The two versions of the logo differ only in directionality (one is the mirror version of the other). Thus, we are not testing the effect of amount of perceived dynamism but the effect of directionality of perceived dynamism. As such, we do not focus on engagement in this study.

In a first pretest, 55 participants from an online pool viewed either the forward or the backward logo and answered the same evaluative measures of the prior pretests. Furthermore, we pretested the perceived directionality by asking, “In what direction did you see the logo headed, if any?” (1 = “clearly from right to left,” 5 = “no clear direction,” and 9 = “clearly from left to right”). The measure of perceived direction was the only statistically significant difference between the two logos ($M_{\text{forward}} = 7.43$, $M_{\text{backward}} = 3.47$; both directions differ from the scale midpoint of 5; $ps < .01$), while visual appearance, visual complexity, informativeness, familiarity, and novelty did not differ (all $ps > .3$). Moreover, perceived movement did not differ ($p > .2$). Thus, we confirmed that Study 4 indeed tests the effect of

Figure 7
ADS USED IN STUDY 4

A: Backward Logo: Traditional Fashion Copy



B: Forward Logo: Modern Fashion Copy



C: Forward Logo: Traditional Fashion Copy



D: Backward Logo: Modern Fashion Copy



direction of perceived movement (and not the amount of perceived movement). In a second pretest, similar to Study 3, 64 participants from an online pool evaluated the traditional description as more traditional ($M = 3.06$), whereas the modern description was characterized as more modern ($M = 6.27$; $F(1, 62) = 49.9, p < .01$).

Main Study

Study 4 employed a 2 (description: traditional, modern) \times 2 (logo direction: forward, backward) between-subjects design. One hundred seventeen participants from an online pool completed the study. Participants were told that they would be evaluating an ad for a company. Each was randomly assigned to view one of the four ads. After viewing the ad, participants answered questions on attitudes toward the brand.

Results and Discussion

We conducted an ANOVA with description and logo direction as the independent variables and attitudes toward the brand as the dependent variable. Here, neither the main effect of description nor the main effect of logo was significant ($p > .2$). However, the interaction between the two factors was significant ($F(1, 113) = 12.16, p < .01$). Planned contrasts reveal that within the modern description, the forward-moving logo led to more favorable attitudes toward the brand than did the backward logo ($M_{\text{forward}} = 6.58, M_{\text{backward}} = 5.28$; $F(1, 113) = 9.58, p < .01$). Within the traditional description condition, we found the opposite results such that the backward-moving logo led to more favorable attitudes toward the brand than did the forward-moving logo ($M_{\text{backward}} = 6.62, M_{\text{forward}} = 5.87$; $F(1, 113) = 3.32, p = .07$).

In Study 4, we contrast implied forward versus backward movement and its metaphorical link with modernity and traditionalism. We find support for a metaphorical match between forward (backward) movement and modernity (traditionalism) enhancing attitudes toward the brand.

STUDY 5 (EYE TRACKING): ENGAGEMENT AND ATTENTION

Although we have found support for our hypothesized model such that perceived movement affects engagement and, ultimately, attitudes, our measures for engagement have relied on explicit self-report. They were also collected after participants viewed the ad; as such, we cannot be certain that the more dynamic visual results in greater engagement with the ad. In Study 5, we measure engagement implicitly and do so at the time the participants view the ad (encoding). As noted previously, prior literature has defined “engagement” as attention to an object, with longer gaze durations and increased refixations on the object representing more engagement (Pieters and Wedel 2007; Teixeira, Wedel, and Pieters 2012). Thus, engagement is represented not only by the overall amount of time spent looking at the stimulus but also by the magnetism of the stimulus, or how often it draws the observer’s eyes back to it (number of fixations). We use eye-tracking technology to measure both duration and number of fixations (Pieters, Wedel, and Batra 2010).

Stimuli and Pretest

In Study 5, the logo is placed within an ad that contains a prominent picture of the product along with a less prominent logo. This is a more realistic stimulus, similar to a half-

or full-page magazine ad. We created two versions of an ad for a fictitious wristwatch brand, “EE.” The ads contained a picture of the watch along with the logo and the website URL (see Figure 8, Panels A and B). The logo for the company was similar to that used in Study 2a (line drawings of Newton’s cradle), with the addition of the company name “EE Watches.”

Similar to the previous studies, a pretest with 55 participants from an online pool showed a nonsignificant difference between the two logos in terms of visual appearance, visual complexity, informativeness, familiarity, and novelty (all $ps > .1$). However, the pretest results show a significant difference in perceived movement ($M_{\text{lower dynamism}} = 3.18, M_{\text{higher dynamism}} = 4.74$; $F(1, 57) = 9.62, p < .01$).

Main Study

Seventy-one undergraduate students from a large university in the western United States completed Study 5 in

Figure 8
ADS USED IN STUDY 5



exchange for course credit. Participants were told that they would be viewing ads using an eye tracker. We used a new-generation, screen-based Tobii eye tracker (Tobii T120) to collect the data. To use this eye tracker, participants simply had to look at the screen (they did not need to wear any additional apparatus). All instructions and stimuli were presented on the 17-inch LCD monitor in full-color bitmaps with a 1280 × 1024 pixel resolution. The eye tracker relies on infrared reflection technology to track the movement of the eyes, with infrared sensors at both the top and bottom of the monitor.

An experimenter brought participants individually into a conference room every ten minutes. The experimenter instructed each participant to take a seat in front of the eye tracker, which looks like a computer monitor. Each participant was first calibrated to ensure that the eye tracker correctly recognized both eyes. If calibration failed, participants' chairs were adjusted to provide accurate recognition of their eyes. Next, the experimenter informed the participants that they would be viewing a brief series of screens and could advance on their own by clicking the mouse. Participants did not have a keyboard in front of them. The eye tracker screen also contained the instructions informing participants that they would view an ad for as long as they wanted.

Results and Discussion

To analyze our eye tracker data, we created a specific area of interest around the logo. An identical area of interest was applied to both ads. We specifically focus on the number of fixations (defined as any gaze longer than 60 milliseconds) as well as the duration of fixations (the overall amount of time spent fixating within the area of interest).

Number of fixations. We began our analysis by conducting a one-way ANOVA with logo dynamism (lower/higher) as the independent variable and number of fixations within the area of interest as the dependent variable. As we anticipated, we found a significant difference between the logos with regard to the number of fixations ($M_{\text{higher dynamism}} = 12.88$, $M_{\text{lower dynamism}} = 9.42$; $F(1, 69) = 11.22$, $p < .01$), with higher logo dynamism leading to more fixations than lower logo dynamism.

Fixation duration. We next conducted a similar analysis with fixation duration (measured in milliseconds, reported in seconds) as the dependent variable. There was a significant impact of logo dynamism on the fixation duration ($M_{\text{higher dynamism}} = 3.76$, $M_{\text{lower dynamism}} = 2.59$; $F(1, 69) = 9.01$, $p < .01$), with higher logo dynamism leading to higher fixation duration than lower logo dynamism.

Survey measures. We also captured overall brand attitudes, our explicit measure of engagement, in addition to perceived movement. To do so, we relied on the survey software provided by the eye tracker (Tobii). The results were in the hypothesized direction for each variable (higher/lower logo dynamism: attitudes: 6.61/6.52, engagement: 5.51/5.10, perceived movement: 5.07/4.74), though they were not statistically significant, perhaps because of the intrusiveness of the equipment.

To ensure that these nonsignificant findings were indeed attributable to the equipment rather than the stimuli, we conducted a posttest using the same stimuli. Seventy-nine participants from an online pool completed the survey for

monetary compensation. Each participant was randomly assigned to view one of the two advertisements and provide their evaluations of attitudes, engagement, and perceived movement. We conducted an ANOVA on each dependent variable. In support of our hypotheses and prior findings, each variable differed between logo dynamism conditions. Specifically, attitudes were more favorable for higher logo dynamism than for lower logo dynamism ($M_{\text{higher dynamism}} = 5.76$, $M_{\text{lower dynamism}} = 5.12$; $F(1, 77) = 4.06$, $p < .05$). Higher logo dynamism also resulted in higher engagement ($M_{\text{higher dynamism}} = 4.90$, $M_{\text{lower dynamism}} = 3.94$; $F(1, 77) = 6.29$, $p < .05$) and perceived movement ($M_{\text{higher dynamism}} = 4.93$, $M_{\text{lower dynamism}} = 2.65$; $F(1, 77) = 33.01$, $p < .01$). In addition, as in Studies 2a, 2b, and 3, engagement mediated the effect of logo dynamism on attitudes toward the brand.

Study 5's eye tracker results use an implicit measure of engagement—time spent looking at logo—to support our prior findings that logos with higher dynamism increase engagement. This study also shows that increased attention can occur through greater refixation on logos with higher dynamism. Moreover, Study 5 demonstrates that the higher level of engagement occurs at the time the viewer encodes the visual stimuli (i.e., the logo).

GENERAL DISCUSSION

Across a series of six studies, we show that static visuals (e.g., brand logos) can generate perceptions of movement, which increase consumer engagement with the logo and in turn enhance brand attitudes (Studies 1, 2a, and 2b). We also show that the perceived movement–engagement–attitude effect is moderated by the metaphorical fit between perceived movement and brand description (Study 3). A similar metaphorical match of forward movement with modern brands and backward movement with traditional brands also boosts attitudes toward the brand (Study 4). Finally, in Study 5, we show that higher (vs. lower) dynamism logos increase duration of looking at the logos partly by increasing the number of fixations on the brand logo within an ad.

Theoretically, our work contributes to the consumer behavior literature stream on visual imagery (e.g., Adaval and Wyer 1988; Hung and Wyer 2011; MacInnis and Price 1987; Peck, Barger, and Webb 2012) by highlighting the evocation and consequences of dynamic imagery. More generally, it adds to the literature exploring the impact of visual cues on consumer behavior (e.g., Deng and Kahn 2009; Hagtveldt and Patrick 2008; Raghuram and Greenleaf 2006; Scott 1994).

Logos served as our operationalization of static visuals through which we manipulated the amount of dynamic imagery. This is a natural placement of dynamic imagery within a consumer context, and it highlights the importance of movement within logo design. However, other elements of marketing communications may also evoke dynamic imagery. For example, photographed or drawn objects in print ads may be designed so that they appear to move. If the objects depicted in the ad are the company's product, they may even be designed to evoke consumption. Further research could study how such representation may be achieved and how it affects behavior.

Future studies could also investigate other antecedents of perceived movement, particularly those relevant to marketers. For example, we did not explore the use of color to

alter perceived dynamism but used only black and white designs. However, color may affect dynamism as well. It is possible that colors reported to be more exciting (e.g., red; Gorn et al. 1997) lead to greater perceived movement than do other colors, ultimately influencing attitudes toward the brand. The effect of color on perceived movement and dynamic imagery is unexplored and thus would be a fruitful area for research.

Although we explored the moderating effect of logo-brand congruence, a moderator that our studies did not address is the level of processing required to obtain our effects. Some prior research has suggested that a considerable amount of processing must occur for the visuals to have an effect on attitudes (Peracchio and Meyers-Levy 2005). Thus, we also measured need for cognition (Cacioppo, Petty, and Kao 1984) in Study 2a. However, we found that this measure did not moderate our results. Nonetheless, additional research could further explore the effect of processing resources on the engagement augmentation by dynamic imagery. For example, an imposition of cognitive load or a restriction placed on the amount of time given to view the information may determine whether these processes are operative at low levels of processing.

When exploring the extent to which congruence between brand characteristics and dynamism affects attitudes (Studies 3 and 4), we used descriptions of the brands that explicitly stated whether the brand was more traditional or more modern. Further research could address the extent to which the effects of congruence occur at a more implicit level, for example, by using established brands that already carry the traditional or modern characteristics rather than fictitious brands. In addition, although we propose that the matching effect occurs as a result of fluency, we do not empirically test this theory. Further research could build on the conceptual fluency literature (e.g., Lee and Labroo 2004; Torelli and Ahluwalia 2012) to establish this mediating mechanism within the context of dynamic imagery and brand characteristics.

Logo familiarity is another moderator future studies could investigate. If a brand is familiar and well known, perceived movement may not have such an impact on engagement and consequent attitudes. Increased familiarity may decrease engagement, meaning perceived movement would have the greatest impact on unfamiliar or new brands.

The current research yields numerous, directly implementable managerial implications. We show that minor differences in visual elements of marketing communications such as logos can affect consumer perceptions and attitudes. A more dynamic logo can be more engaging and can enhance consumer attitudes unless such dynamism is incongruent with the brand's image. We did not explore animated, moving logos; however, the current media environment allows for easy adoption of actual movement within logos to be placed online, on smartphones, or within social media. Given our findings, we would expect the actual motion within logos to have similar consequences.

Because a logo is one key element of a brand, the relationship between the brand's characteristics and the dynamism evoked by the logo should be a key point of focus in logo design. Our results suggest that traditional brands should avoid dynamism, whereas more modern and progressive brands should fully embrace it. However, often

a company may want its sub-brands to be perceived differently. In this case, tweaks to the main logo such that each sub-brand has its own logo that varies in dynamism from the others may be beneficial. One company to have successfully implemented this notion (albeit possibly unintentionally) is Adidas. Three of the firm's main sub-brands, Originals, Performance, and Neo, are characterized by logos that seem to differ progressively in perceived dynamism (see Figure 9, Panels A, B, and C, respectively). Brands that aim to maximize the benefits of evoked dynamism within logos can adjust their strategy to match each specific sub-brand.

Finally, although we focus our attention on the effects of dynamic imagery within logo design, companies can also use these findings within a broader context of marketing communications. For example, visual pictures of frozen motion within a print advertising campaign should similarly affect engagement and, ultimately, attitudes toward the brand.

APPENDIX: VISUAL APPEARANCE, VISUAL COMPLEXITY, INFORMATIVENESS, FAMILIARITY, AND NOVELTY SCALE DETAILS

We adapted the logo visual appearance scale from Mathwick, Malhotra, and Rigdon's (2001) Experiential Value Scale—Visual Appeal Factor. It consists of three nine-point items (1 = "strongly disagree," and 9 = "strongly agree"): "I

Figure 9
ADIDAS SUB-BRANDS

A: Adidas Originals



B: Adidas Performance



C: Adidas Neo



like the way the logo looks,” “The logo is attractive,” and “The logo is aesthetically appealing.” Two items measured the logo visual complexity index. In the first item, participants rated the complexity of the logo on a nine-point scale (1 = “very simple,” and 9 = “very complex”). Complexity was defined as the amount of detail or intricacy of line in the logo. Participants were told to rate the complexity of the drawing itself rather than the complexity of the real-life object it represented (Snodgrass and Vanderwart 1980). We adapted the second item from Cox and Cox (1988). It asked, “How would you evaluate this logo?” (1 = “not complicated,” and 9 = “very complicated”). We measured informativeness by asking participants to evaluate how informative the logo was on a nine-point scale (1 = “not informative at all,” and 9 = “very informative”); Mogilner, Rudnick, and Iyengar (2008). Similarly, participants rated logo familiarity on a nine-point scale (1 = “not familiar at all,” and 9 = “very familiar”); Hyland and Birrell (1979). We measured novelty by asking participants to report the degree to which the logo was unusual, original, and new, using nine-point Likert scales (Cox and Cox 1988).

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