J. of the Acad. Mark. Sci. (2016) 44:639–653
DOI 10.1007/s11747-015-0449-2

ORIGINAL EMPIRICAL RESEARCH

Living brands: consumer responses to animated brand logos

S. Adam Brasel[1] · **Henrik Hagtvedt**[2]

Received: 4 August 2014 / Accepted: 7 May 2015 / Published online: 31 May 2015

Abstract This research builds foundational theory in a new domain of marketing: animated visual brand elements. It focuses on agent animation, which conveys a sense that the brand element, such as a logo, moves of its own volition, as distinguished from object animation, which does not. Given limited marketplace utilization (pilot study), animated logos represent new opportunities for branding and promotion. However, the influence of agent animation on attitude toward the firm or brand is contingent on the fluent processing of the animation in the context it is used. As compared with object-animated or static logos, agent animation encourages more favorable attitudes toward dynamic firms but less favorable attitudes toward stable firms (Studies 1 and 2). Further, more favorable attitudes arise when the brand personality suggested by the animation is consistent with other brand cues, such as brand slogans (Study 3) or the logo graphic (Study 4). Finally, the effects are replicated with choice behavior using established brands (Study 5).

Keywords Logos · Animation · Attention · Agency · Brand personality · Brand attitude

S. Adam Brasel and Henrik Hagtvedt contributed equally to this work.

✉ Henrik Hagtvedt
hagtvedt@bc.edu

S. Adam Brasel
brasels@bc.edu

[1] Carroll School of Management, Boston College, Fulton Hall 443, 140 Commonwealth Ave, Chestnut Hill, MA 02467, USA

[2] Carroll School of Management, Boston College, Fulton Hall 450D, 140 Commonwealth Ave, Chestnut Hill, MA 02467, USA

The modern world is shifting from traditional print media to animated screens, and consumers' attention is increasingly geared toward smartphones, tablets, and laptops (Medoff and Kaye 2010; Rapp et al. 2013). This provides new opportunities for marketing materials such as brand logos. Just as higher quality printing and color production allowed logos to move beyond textmarks and become graphical, screen-based media now allow them to become animated.

Animation appears to offer potential benefits for brands. It may serve as a promotional tool and help establish brand personalities, leading to more vivid brand identities. Why, then, are most brand logos still static? This could be due to brand inertia, as many popular logos were established in the era of print media dominance when animated logos were not possible. However, even modern technology and internet brands commonly adhere to static logos, and the rare instances of logo animation are typically simple fade-ins, fade-outs, or screen location translations. Although internet marketing research has begun to explore the effect of overall advertisement animation on attention toward the ad, there is little or no research on the effects arising from more focused efforts such as brand logo animation.

While animation effects can apply to any visual aspect of marketing, logos are a particularly relevant area of inquiry as they (1) are typically discrete objects that are easily animated, (2) have received relatively little attention in the marketing literature, and (3) are central to branding efforts. The brand logo is a cornerstone of brand identity (Lupton 2004), and prior research has focused on understanding the influences of its graphical and typographic elements (Hagtvedt 2011; Henderson et al. 2004; Janiszewski and Meyvis 2001; van der

Lans et al. 2009). Notably, recent research demonstrates that implied movement in static logos favorably influences brand attitudes by enhancing engagement (Cian et al. 2014). However, scholarly research on logo customization appears to be lagging behind opportunities inherent in the changing media landscape (Buttle and Westoby 2006). Along with the literature on effects of specific logo typography (Henderson et al. 2004; Wheeler 2006) and graphical design elements (Bottomley and Doyle 2006; Henderson and Cote 1998), there is a growing need for research on the effects of logo animation.

The current research distinguishes between agent animation, which gives viewers a sense that the logo moves of its own volition, and object animation, which does not. In addition to introducing agent animation to the marketing literature, we provide insights into its influence on consumer preferences. First, we show that agent animation serves as a cue in and of itself, conveying a sense of agency, which in turn aligns with a sense of brand dynamism. As compared with object-animated or static logos, agent animation encourages more favorable attitudes toward firms with consumer expectations of dynamism, but less favorable attitudes toward firms with consumer expectations of stability. Second, we establish that agent animation serves as a personality cue; consumers can interpret brand personality from the animation of simple logos and match these traits with those suggested by other brand cues, such as slogans or logo graphics. Third, high perceived fit between animation cues and other brand elements has a favorable influence on brand attitude, and results indicate that the influence is mediated by conceptual fluency. Fourth, perceived fit influences choice between existing brands as well.

Overall, the insights presented in this research provide practical guidelines for managerial use of animation as well as a foundation for building more theory in this underexplored domain. Indeed, animation has been given scarce research attention in marketing (Calcott and Lee 1994). Earlier calls for increased work have gone largely unanswered (Bush et al. 1983), and recent work has highlighted ample opportunities for further exploration into the role of motion in branding (Cian et al. 2014). Further, what little research does exist has primarily focused on the role of motion within internet banner advertising, not on different animation styles or the animation of individual elements such as logos.

Compared with the generally positive animation effects found in visual psychology research, marketing research evidence is more mixed. For instance, Yoo et al. (2004) find primarily positive effects for animation in web advertising, but Simola et al. (2011) find varying effects of animation depending on ad shape, and Yoo and Kim (2005) show an inverted U-shaped effect of internet animation on brand memory. However, differences between types of animation were not central to those studies. Visual psychology suggests that all animation is not created equal, and this notion is of critical concern in the current research.

Agent versus object animation

The term *animation* reflects the core concept of *animacy*, or the power animation has to convey an illusion of life in an object (Cholodenko 1991). This illusion can be generated for solitary objects without an interactive partner (Gyulai 2004), and even for abstract shapes with little resemblance to the human form or other living creatures (Morewedge et al. 2007). Further, animation styles need not be complex to convey animacy (Scholl and Tremoulet 2000); even simple movements may convey life, especially if they include elements such as changes in velocity or direction (Tremoulet and Feldman 2000). These insights build on classic research by Heider and Simmel (1944), in which simple movements in geometric forms give rise to perceptions of life, goals, and intentional states.

The concept of animacy is therefore linked to the perception of *agency*: that an entity takes self-directed action. Certain types of animation convey the sense that the entity has agency and can move of its own volition, while other types of animation do not. To differentiate between these two types of animation, we use the terms *agent animation* and *object animation*, respectively. Agent animation connotes agency, in other words, the perception that the object moves on its own in a lifelike fashion (e.g., a jumping logo), while object animation entails motion that is not lifelike (e.g., a logo gliding vertically). This notion is consistent with prior literature suggesting that a key element of visual attention developed through evolutionary pressure is the ability to quickly distinguish between "Objects" and "Agents" (Guthrie 1993). This distinction pertains to whether the target of attention has no mind or agency (i.e., an Object), or has a mind or agency (i.e., an Agent) and thus must be judged as a potential ally, predator, prey, or mate. This perception of Object versus Agent occurs spontaneously, automatically, and with little effort on the part of the observer (Hassin et al. 2005). In industrialized societies, object motion is especially plentiful, with numerous objects moving in predictable paths. From clock hands to conveyor belts, much modern motion is automatic, with few markers of agency.

Basic animation, referred to here as object animation, is composed of four fundamental transformations:

translation (movement on x or y coordinates), rotation (rotation of the object around an internal axis), scaling (zoom in/zoom out), and luminance (fade in/fade out; Hildreth 1984). In this type of animation, the entity is perceived as moving along predetermined paths (Opfer 2002). For instance, the Universal Studios globe logo rotates into place to announce the beginning of a movie. Similarly, the Warner Bros. Pictures logo rotates and recedes into the screen.

Agent animation, on the other hand, includes elements such as changes in direction and velocity or compound motion, and the entity is perceived as moving on its own (Tremoulet and Feldman 2000). For example, in the Pixar logo, the lamp jumps into place and then "looks" at the audience. Such motions give a sense of internal agency to the entity even when it is not anthropomorphic, as when Intel's logo for their Centrino processors flies into place as if self-propelled.

Prior research suggests that agent-animated logos might enjoy attentional advantages, not only over static logos but also over object-animated logos. An attentional bias toward animate entities is one of the first perceptual biases to develop, exhibiting in infants as young as 2 months (Legerstee 1991). Indeed, agent motion activates additional sectors of the brain that do not activate for object motion (Blakemore et al. 2003), and research has shown increased visual interest in abstract shapes displaying agent motion versus object motion (Pratt et al. 2010). A more complicated question, however, is how animation influences consumer attitude toward the firm or brand.

Hypothesis development

Consistency, brand personality, and fluency

Prior research indicates that increased attention may lead to favorable brand attitudes (Chandon et al. 2009). In general, one might suspect that logo animation, and especially agent animation, may have a favorable influence on brand attitude as well. However, we expect that this influence is more complex than a main effect of increasing attention, and that it depends on the fit between the animation and other salient information about the firm or brand. This expectation aligns with research in marketing highlighting favorable consumer perceptions, ranging from quality to authenticity, tied to consistency between brand cues (Miyazaki et al. 2005; Spiggle et al. 2012). We argue that agent animation can serve as a brand cue in at least two ways: (1) as a general agency cue and (2) as a cue for specific brand personality connotations. We further argue that the influence of the animation on brand evaluation depends on the fit between these animation cues and other brand cues.

Fit between agent animation and firm

When serving as a brand cue, the dynamic nature of agent animation may fit well with certain types of firms but not with others, depending on the dynamism versus stability that consumers expect from these firms. For example, an entertainment company is expected to provide fun and colorful entertainment, but an insurance company is expected to provide predictable protection (Hagtvedt 2011). The latter firm thus fits with brand cues signaling stability and predictability, which seem more likely to arise from static or object-animated logos rather than the more malleable behavior implied by agent animation, which fits better with the entertainment firm. This argument aligns with Cian et al. (2014) finding that the influence of perceived logo dynamism depends on the fit with the brand.

Agent animation suggests that the animated entity is capable of taking self-directed action, which may give rise to uncertainty about intentions and potential activities (Guthrie 1993; Hassin et al. 2005). Conversely, it is easy to predict the actions (or lack thereof) of static entities, and it is almost equally easy to do so with object-animated entities, which follow predictable or predetermined motion paths (Opfer 2002). This aligns poorly with a firm that should be dynamic, but it aligns well with one that should be stable and predictable. In sum, we expect that consumers perceive agent animation to fit with a dynamic firm, whereas object animation or static logos fit with a stable firm, and we expect this congruity to influence consumers' attitudes toward the firm in question.

H1: An agent-animated logo engenders more (vs. less) favorable attitudes toward a firm that aligns with dynamism (vs. stability), as compared with object-animated or static logos.

Brand cue consistency and conceptual fluency

Beyond the question of dynamism versus stability, we expect more (vs. less) favorable attitudes to arise when there is high (vs. low) congruity between the brand cues provided by the logo animation and other sources of brand information. In other words, in addition to conveying a sense of agency, we propose that agent animation also serves as a carrier of brand meaning. Based on movement alone, individuals can assign specific emotional states to abstract geometric shapes (Rimé et al. 1985). Further, if the animation endows an entity with a sense of agency, consumers should be especially likely to attribute beliefs and desires to that entity (Barrett

and Johnson 2003), and they are likely to spontaneously generate emotional and personality attributions to an entity perceived as having a mind (Padgham and Taylor 1997). A salient aspect of agent animation may therefore be the brand personality it evokes, which can have a good or poor fit with the brand personality evoked by other cues, such as the shape of a logo. There is limited research that explores how various brand personality cues combine, with most studies investigating cues in isolation, such as a slogan or a graphic element (Aaker 1997; Aaker et al. 2004; Johar et al. 2005). However, research on other extrinsic product cues suggests that consumers respond favorably to consistency (for example, product quality cues in Miyazaki et al. 2005). One reason for this is that inconsistent information triggers elaboration and cognitive effort, while consistent information is processed relatively effortlessly (Wyer and Srull 1989).

This perspective fits well with fluency theory, according to which consumers prefer stimuli that are easily processed (Reber et al. 1998). This has been demonstrated in various marketing contexts, ranging from consumer goals to advertising appeals (Duhachek et al. 2012; Labroo and Lee 2006; Lee and Labroo 2004). In the current context, we suggest that good fit between the brand personality conveyed by agent animation and that conveyed by other brand cues increases conceptual fluency. While perceptual fluency reflects the ease with which consumers identify a target stimulus and process its physical features, conceptual fluency reflects the ease with which they can understand its meaning (Lee and Labroo 2004). For example, conceptual fluency underlies the influence of employee–brand alignment on brand evaluations (Sirianni et al. 2013); consumer evaluations of the brand are enhanced when employees' sophisticated (rugged) service behavior aligns with the brand's sophisticated (rugged) personality, because alignment is easier to understand than misalignment.

This conceptualization of fluency is closely related to the notion of fit. For example, recent work on fit-as-fluency shows that increased conceptual fit can favorably influence attitudes because fit increases fluency (Avnet et al. 2013; Lee and Aaker 2004). In the current context, we expect that favorable attitudes will result from animations that are conceptually fluent because of a good fit with other brand information provided. For instance, a logo that uses graphical elements to connote excitement should make animation elements that also connote excitement easier to process, and vice versa. Formally stated:

H2: Agent animation engenders more (vs. less) favorable attitudes toward the brand when the personality conveyed by the animation is more (vs. less) consistent with the personality conveyed by other brand cues.

H3: The influence of animation on attitudes toward the firm or brand associated with that animation is mediated by conceptual fluency.

Empirical overview

A pilot study and five main studies were designed to investigate consumer responses to agent-animated logos. The pilot study shows that there is currently low marketplace utilization of logo animation, and especially of agent animation, highlighting the untapped potential of this marketing tool. Five main studies were subsequently designed to investigate the circumstances under which agent animation has a favorable influence on attitude toward the firm or brand. In Studies 1 and 2, agent logo animations encourage more favorable attitudes toward a firm aligned with consumer expectations of dynamism (an entertainment company) but less favorable attitudes toward a firm aligned with expectations of stability (an insurance firm), as compared with object animation or static logos. Further studies establish that more favorable attitudes arise when the brand personality suggested by the agent animation is consistent (vs. inconsistent) with other brand cues, such as slogans (Study 3), logo graphic (Study 4), or personality of an established brand (Study 5). The results indicate that consumers interpret personality information from each source, and that good fit between these cues increases conceptual fluency; across multiple studies conceptual fluency is shown to mediate the influence of animation on attitude.

Pilot study

The pilot study analyzed real-world television and internet programming to investigate current usage of logo animation within the marketplace. Informal observation by the authors had suggested low usage, despite recent technological advances facilitating the practice. If this observation was correct, logo animation could represent a new and untapped opportunity for branding and promotion, potentially offering competitive advantage for early adopters.

Approximately 30 h of primetime television programming was recorded using an A/V editing computer across 2 weeks separated by 1 month. Eliminating duplicate commercials yielded a pool of 417 30-s commercials. Additionally, a video screen-capture program was used to capture 150 banner (horizontal) and 150

skyscraper (vertical) animated advertisements across a number of popular websites (Cnet.com, CNN.com, IGN.com, PopSugar.com, and NYTimes.com). These television and internet ads were then coded to identify whether the brand logo in the commercial was static, object-animated, or agent-animated. An ad was coded as object-animated when it utilized one of the four basic motions (translation, rotation, luminance, and scaling), as when an object is acted on by an outside force (Gelman and Spelke 1981). It was coded as agent-animated when a combination of basic motions suggested the motion came from an internal source (such as a logo bumping into a wall and then shaking as if to clear its head), thus conveying a sense of agency. Coding by two separate coders resulted in 100% agreement on the static logos and 95% agreement on the object versus agent classifications. Differences were resolved via discussion.

Results revealed an exceedingly infrequent use of agent animation. For the television commercials, 62.3% featured static logos, 34.6% featured object animation, and only 3.1% utilized agent animation. Interestingly, the only brands utilizing agent animation were those that also employed an anthropomorphic figure within the logo itself, such as the cartoon girl in the Wendy's logo (fast food) looking around and smiling, or the drumming rabbit in the Energizer logo (batteries). No abstract, textual, or geometric logos in the sample featured agent animation, even though the results of our studies demonstrate that agent animation can convey a sense of agency to such logos, along with a favorable influence on attention and brand evaluation.

The pattern of results for the online web advertisements showcased even less brand logo animation. Of these ads, 93.4% featured static logos, 6.6% utilized object animation (such as the Hewlett Packard computers logo featuring animated fireworks or the colored plumes of the NBC television network "peacock" sequentially fading in), and no web ads featured agent animation. Even when the analysis was constrained to ads with full animation beyond just the log, such as extensively Flash-animated ads (15.7% of the sample), only 17.6% featured object-animated logos, and none featured agent-animated logos.

Together, the results of the television and online ad panels reveal an extremely low marketplace utilization of agent animation. This suggests that positive effects of such animation could potentially provide early adopters with a competitive advantage. The following studies were therefore designed to investigate the influence that agent animation may have on attitudes toward the firm or brand associated with the logo. Given the difficulty of controlling for prior perceptions associated with existing brands, Studies 1–4 utilize fictitious brands.

Pretest

A graphic designer created three logos for use in the studies: a simple tree shape with spiky triangles, filigree, or flat brush strokes. These logos were designed to carry common brand personality connotations of excited (spiky) or sophisticated (filigree), as well as a neutral control (flat); these are common brand personality traits in the marketplace and literature (Aaker 1997; Aaker et al. 2004; Johar et al. 2005). A pretest with 53 participants tested whether the designs reflected the intended personalities. Chi-square analysis comparing participant categorizations of logo personality revealed significant differences for all three logos (all $\chi^2(2)>42.38$, $p<.001$). Participants categorized the exciting logo as exciting (77.4% exciting vs. 18.9% neutral and 3.7% sophisticated), the sophisticated logo as sophisticated (77.4% sophisticated vs. 13.2% neutral and 9.4% exciting), and the neutral logo as neutral (75.5% neutral vs. 11.3 exciting and 13.2% sophisticated). A neutral gem-shaped logo was also created for Study 2. See Appendix 1 for stimuli.

Study 1

The purpose of this study is to investigate the influence of agent animation on attitudes toward the firm, as compared to that of object animation or a static logo. Our expectation is that agent animation will have a relatively favorable influence for firms that align with an expectation of dynamism, such as an entertainment company, whereas it will have a relatively unfavorable influence for firms that align with an expectation of stability, such as an insurance company. In this study, a jumping movement was utilized for the agent animation, while vertical movement from the top to the bottom of the screen was utilized for the object animation. The animation schemes were applied to the neutral tree-shaped logo.

Method and procedure

One hundred and eighty-two adults (32% female, M_{age}= 31 years, Median income=$35 K–$50 K) participated in an online study via Amazon Mechanical Turk. The study was a 2 (company: dynamic vs. stable) × 3 (animation: agent vs. object vs. static) between-subjects experiment. Participants viewed a logo animation that they were told belongs to an entertainment company (dynamic) or an insurance company (stable), depending on the condition. They next reported their impression of the company on seven-point semantic differential scales (unfavorable–favorable, negative–positive, bad–good, unpleasant–pleasant, dislike very much–like very

much), later combined in an attitude index (α=.97). They also reported, on seven-point scales, how fluently they processed the combination of logo with company (difficult to make sense of–easy to make sense of, difficult to process–easy to process, difficult to understand–easy to understand), later combined in a fluency index (α=.98). Adapted from prior literature (e.g., Labroo and Lee 2006; Sirianni et al. 2013), these measures reflect the definition of conceptual fluency as the ease of processing and understanding information (Lee and Labroo 2004). As expected, subsequent factor analysis revealed that the attitude and fluency measures loaded on two factors, with eigenvalues above 1, cumulatively explaining 93% of the variance. To control for the possible influence of mood, participants further reported mood on seven-point scales (bad mood–good mood, unhappy–happy, negative–positive), later combined in a mood index (α=.96). No significant effects were found on mood, and including it as a covariate did not alter the other patterns of results.

Although the firm types were adopted from prior research (Hagtvedt 2011), an additional manipulation check was conducted to test whether an entertainment (insurance) company aligns with dynamism (stability). In a categorization task, 180 out of 182 participants paired the descriptor of dynamism with an entertainment company and the descriptor of stability with an insurance company (χ^2=174.09, p<.001). As a manipulation check for agency, participants reported, on seven-point Likert scales (1=Not at all, 7=Definitely), the extent to which the logo seemed to move on its own, seemed alive, and was lifelike, later combined in an agency index (α=.91). An ANOVA with company and animation on the agency index revealed the expected effect of animation (M_{agent}=4.67 vs. M_{object}=3.13 vs. M_{static}=1.51, F(2, 176)=79.66, p<.001). Contrast analysis revealed significant differences between all three conditions (Fs>28.5, p<.001).

Results

Attitude An ANOVA with company and animation as the independent variables and the attitude index as the dependent variable revealed the expected company x animation interaction (F(2, 176)=25.85, p<.001, partial η^2=.23). See Table 1 for means. Contrast analysis revealed that for the dynamic company, the agent animation resulted in significantly more favorable attitude (M=4.96), as compared with the object animation (M=4.10, F(1, 58)=5.66, p<.05) and the static logo (M=3.99, F(1, 60)=7.47, p<.01). For the stable company, the agent animation resulted in significantly less favorable attitude (M=2.99), as compared with the object animation (M=4.73, F(1, 59)=26.49, p<.001) and the static logo (M=5.28, F(1,59)=57.97, p<.001). These results support H1. A main effect of animation was also noted (M_{agent}=3.98 vs. M_{object}=4.42 vs. M_{static}=4.62 F(2, 176)=3.90, p<.05, partial η^2=.04).

Fluency A similar ANOVA on the fluency index revealed the expected company x animation interaction (F(2, 176)=33.49, p<.001, partial η^2=.28). See Table 1 for means. Contrast analysis revealed that for the dynamic company, the agent animation resulted in significantly higher fluency (M=4.54), as compared with the object animation (M=3.21, F(1, 58)=7.89, p<.01) and the static logo (M=3.32, F(1, 60)=6.59, p<.01). For the stable company, the agent animation resulted in significantly lower fluency (M=2.54), as compared with the object animation (M=5.09, F(1, 59)=34.64, p<.001) and the static logo (M=5.90, F(1, 59)=87.36, p<.001). Main effects of company ($M_{entertainment}$=3.70 vs. $M_{insurance}$=4.49 F(2, 176)=10.95, p<.01, partial η^2=.06) and animation (M_{agent}=3.54 vs. M_{object}=4.16 vs. M_{static}=4.59 F(2, 176)=6.39, p<.01, partial η^2=.07) were also noted.

Mediation analysis Bootstrap estimation with 10,000 resamples (PROCESS model 8; Hayes 2012) confirmed that fluency mediates the moderated effect of animation on attitude, as indicated by the significant indirect effect of the highest order interaction (M=1.11, SE=.19, 95% CI=.77,

Table 1 Study 1: the influence of logo animation on attitude and fluency

	Attitude		Fluency	
Animation	Dynamic company	Stable company	Dynamic company	Stable company
Agent	4.96	2.99	4.54	2.54
Object	4.10*	4.73***	3.21**	5.09***
Static	3.99**	5.28***	3.32**	5.90***

For fluency within stable company, object is also different from static (p<.05)

* Different from agent animation in same column (p<.05)

** Different from agent animation in same column (p<.01)

*** Different from agent animation in same column (p<.001)

1.52). The indirect effect of animation on attitude was significant for the dynamic company (95% CI=.07, .54) and the stable company (95% CI=−1.08, −.58). These results support H3.

Discussion

The results of Study 1 support the notion that agent animation gives rise to different effects than object animation or static logos. Indeed, the influences of the two latter conditions on attitude toward the firm were equivalent, while the influence of agent animation was significantly different from both of them. Specifically, agent animation has a more (vs. less) favorable influence on attitude toward a firm with consumer expectations of dynamism (vs. stability). Additionally, the perceived fluency of the animated logo in the context of the firm mediated the influence of animation on attitude toward the firm. This also indicates that the influence is not entirely driven by the attention-capturing effect of animation. This fits well with H1 and H3 and bolsters our confidence in our theorizing regarding the match between the firm and the animation.

Study 2

Study 2 was designed to ensure that our results were not driven by idiosyncrasies of the particular animations chosen, and to explore potential unfavorable connotations tied to the notion that object-animated logos are moved by outside forces. This study relied on a similar design to Study 1, but with additional measured constructs and new animations (the logo doing flips for the agent animation and diagonal movement across the screen for object animation). In addition, the gem-shaped logo rather than the tree-shaped logo was used to confirm that the effects are not restricted to logo designs that imply life, such as a tree.

Method and procedure

Eighty-four MBA students (53% female, M_{age}=25 years) participated in the 2 (company: dynamic vs. stable) × 2 (animation: agent vs. object) between-subjects experiment. As in Study 1, participants viewed a logo animation that they were told belongs to an entertainment company (dynamic) or an insurance company (stable), depending on randomly assigned condition. They next reported their impression of the company using scales from Study 1, combined into an attitude index (α=.86). They also reported, with the scales from Study 1, how fluently they processed the combination of logo and company (α=.86), as well as the agency manipulation check (α=.94). Next, they reported the degree to which they felt the company was pushed around, not in control, or helpless (α=.92). An ANOVA with company and animation on this latter measure revealed no significant effects (all p>.22), indicating that the lack of agency in object animation does not necessarily suggest that the logo or company is being pushed around. A similar ANOVA on the agency manipulation check revealed the expected effect of animation (M_{agent}=5.05 vs. M_{object}=4.14, $F(1, 80)=13.35$, p<.001).

Results

Attitude An ANOVA with company and animation as the independent variables and the attitude index as the dependent variable revealed the expected company x animation interaction ($F(1,80)=4.32$ p<.05, partial η^2=.05), where attitude toward the dynamic firm was more favorable in the agent condition (5.47) versus the object condition (4.98), but attitude toward the stable firm was less favorable in the agent condition (4.85) versus the object condition (5.32). There were no other significant effects. This provides further support for H1.

Fluency A similar ANOVA on the fluency index revealed the expected company x animation interaction ($F(1,80)=8.86$, p<.01, partial η^2=.10), where the agent condition (4.85) was more fluent than the object condition (4.09) for the dynamic firm, but the object condition (4.71) was more fluent than the agent condition (4.04) for the stable firm. There were no other significant effects.

Mediation analysis Bootstrap estimation with 10,000 resamples (PROCESS model 8) confirmed that fluency mediates the moderated effect of animation on attitude, as indicated by the significant indirect effect of the highest order interaction (M=.49, SE=.20, 95% CI=.18, 1.02). The indirect effect of animation on attitude was significant for the dynamic company (95% CI=.04, .54) and the stable company (95% CI=−.65, −.05). These results support H3.

Discussion

The results of Study 2 replicate those from Study 1, while relying on different logo and animations. Specifically, agent animation had a favorable (vs. unfavorable) influence on attitudes toward a firm with consumer expectations of dynamism (vs. stability). Additionally, the perceived fluency of the animated logo in the context of the firm mediated the influence of

animation on attitudes toward the firm. To further investigate the influence of agent animation on attitude, depending on the fit between the brand personality conveyed by the animation and that conveyed by other brand cues, we designed further studies to investigate cues such as slogan (Study 3), graphic (Study 4), or prior brand associations (Study 5).

Study 3

The purpose of this study is to investigate consumer responses to agent animations that have a good or poor fit with other brand cues. In this study, brand information is presented in the form of a slogan. Our expectation is that participants will correctly identify the brand personality conveyed by the animation and that they will respond more (vs. less) favorably when this is more (vs. less) consistent with the personality conveyed by the slogan.

Pretest

Two aforementioned animation schemes were designed with movement conveying an exciting personality (jumping around) or a sophisticated personality (spinning once and bowing). Exciting and sophisticated were selected as the two target brand personalities due to prior use in the academic literature and common usage in real-world branding (Aaker 1997; Aaker et al. 2004; Johar et al. 2005). An online pretest was conducted with 52 participants to ensure the animation styles were perceived correctly. The animation schemes were applied to the neutral tree-shaped logo described in the pilot study. Participants were shown the two agent animations and were asked to classify them as exciting or sophisticated. Subsequent chi-square analysis revealed that 46 out of 52 participants correctly categorized the exciting animation as exciting (χ^2=30.77, p<.001). Forty-six out of 52 participants also correctly categorized the sophisticated animation as sophisticated (χ^2=30.77, p<.001).

Method and procedure

One hundred and twenty adults (51% female, M_{age}= 36 years, Median income=$35 K–$50 K) participated in an online study via Amazon Mechanical Turk. The study was a 2 (animation: exciting vs. sophisticated) × 2 (slogan: exciting vs. sophisticated) between-subjects experiment. Participants viewed the animated tree-shaped logo (exciting or sophisticated) along with a brand slogan (either "The exciting choice" or "The sophisticated choice") displayed along the bottom of the screen. Participants could view the logo or restart the animation as long or as many times as they desired. They then exited this screen and spent however long they needed to complete a questionnaire. Participants reported their impression of the brand on the same seven-point scales as in the prior studies, later combined in a brand attitude index (α=.97). They also reported how fluently they processed the combination of logo with slogan on the same scales as Study 1, later combined in a fluency index (α=.97). To control for the possible influence of mood, the same mood measures as in Study 1 were collected (α=.97). No significant effects were found on mood, and including it as a covariate did not alter the other patterns of results, so it is not discussed further. As a manipulation check for logo animation, participants characterized it on a seven-point scale (1=sophisticated, 7=exciting). ANOVA revealed the expected effect of animation ($M_{exciting}$=5.31 vs. $M_{sophisticated}$=3.13, F(1, 116)=44.65, p<.001). As a manipulation check for slogan, participants characterized it on a seven-point scale (1=sophisticated, 7=exciting). ANOVA revealed the expected effect of slogan ($M_{exciting}$=6.50 vs. $M_{sophisticated}$=1.48, F(1, 116)= 416.24, p<.001). There were no other significant effects.

Results and discussion

Attitude An ANOVA with animation and slogan as the independent variables and the brand attitude index as the dependent variable revealed the expected animation x slogan interaction ($M_{exciting,\ exciting}$=4.75 vs. $M_{exciting,\ sophisticated}$=3.49 vs. $M_{sophisticated,\ exciting}$=4.07 vs. $M_{sophisticated,\ sophisticated}$=5.62, F(1, 116)=36.01, p<.001, partial η^2=.24). Contrast analysis revealed that both conditions in which the animation was matched with the slogan resulted in more favorable attitude compared with both mismatched conditions (F>3.25, p<.05). These results support H2. A main effect of animation was also noted ($M_{exciting}$=4.15 vs. $M_{sophisticated}$=4.78, F(1, 116)=9.58, p<.01, partial η^2=.08). These results support H2.

Fluency A similar ANOVA on the fluency index revealed the expected animation x slogan interaction ($M_{exciting,\ exciting}$=5.31 vs. $M_{exciting,\ sophisticated}$=2.57 vs. $M_{sophisticated,\ exciting}$=3.58 vs. $M_{sophisticated,\ sophisticated}$= 5.95, F(1, 116)=82.15, p<.001, partial η^2=.42). Contrast analysis revealed that both conditions in which

the animation was matched with the slogan resulted in more fluent processing compared with both mismatched conditions (F>14.96, $p<.001$). A main effect of animation was also noted ($M_{exciting}=4.01$ vs. $M_{sophisticated}=4.67$, F(1, 116)=8.49, $p<.01$, partial $\eta^2=.07$).

Mediation analysis Bootstrap estimation with 10,000 resamples (PROCESS model 8) confirmed that fluency mediates the moderated effect of animation on attitude, as indicated by the significant indirect effect of the highest order interaction (M=2.95, SE=.41, 95% CI=2.21, 3.84). The indirect effect of animation on attitude was significant for the exciting slogan (95% CI=−1.53, −.50) and the sophisticated slogan (95% CI=1.45, 2.55). These results support H3.

Discussion

The results of Study 3 support the notion that the influence of agent animation on brand attitude depends on the consistency between the personality conveyed by the animation and that conveyed by other brand cues, such as slogans, and further demonstrate the mediating role of conceptual fluency in this influence.

Study 4

The purpose of this study is to investigate consumer responses to agent animations that have a good or poor fit with the logo graphic. Our expectation is that participants will respond more (vs. less) favorably when the animation is more (vs. less) consistent with the personality conveyed by the logo graphic.

Method and procedure

One hundred and twenty-four adults (36% female, $M_{age}=31$ years, Median income=$35 K–$50 K) participated in an online study via Amazon Mechanical Turk. The study was a 2 (logo: exciting vs. sophisticated) × 2 (animation: exciting vs. sophisticated) between-subjects experiment. Participants first viewed an animated logo that represented a sporting goods retailer called Single Tree. Depending on randomly assigned condition, they viewed either the exciting or sophisticated tree-shaped logo (described in earlier pretest; see Appendix 1) with either the exciting or sophisticated agent animation (described in Study 3). Participants reported brand attitude index ($\alpha=.98$), processing fluency ($\alpha=.97$), and mood control ($\alpha=.97$) on the same scales as in the previous studies. No significant effects were found on mood, and including it as a covariate did not alter other patterns of results. As manipulation checks, participants reported brand personality conveyed by the logo graphic (1=sophisticated, 7=exciting) and the animation (1=sophisticated, 7=exciting). An ANOVA with logo and animation as the independent variables and brand personality as the dependent variable revealed the expected main effect of logo ($M_{exciting}=5.73$ vs. $M_{sophisticated}=2.28$, F(1, 120)=212.59, $p<.001$). There were no other significant effects. A similar ANOVA on brand personality conveyed by the animation revealed the expected main effect of animation ($M_{exciting}=5.80$ vs. $M_{sophisticated}=2.94$, F(1, 120)=117.49, $p<.001$). There were no other significant effects.

Results

Attitude An ANOVA with logo and animation as the independent variables and the brand attitude index as the dependent variable revealed the expected logo x animation interaction ($M_{exciting,\ exciting}=5.09$ vs. $M_{exciting,\ sophisticated}=4.15$ vs. $M_{sophisticated,\ exciting}=3.68$ vs. $M_{sophisticated,\ sophisticated}=4.58$, F(1, 120)=14.03, $p<.001$, partial $\eta^2=.11$). Consistent with the results of Study 3, contrast analysis revealed that attitudes were significantly more favorable when the exciting logo was animated excitingly and the sophisticated logo was animated sophisticatedly, as compared to the other conditions (F>6.13, $p<.05$). These results support H2. A main effect of logo was also noted ($M_{exciting}=4.62$ vs. $M_{sophisticated}=4.14$, F(1, 120)=4.01, $p<.05$, partial $\eta^2=.03$).

Fluency A similar ANOVA on the fluency index revealed the expected logo x animation interaction ($M_{exciting,\ exciting}=5.21$ vs. $M_{exciting,\ sophisticated}=3.66$ vs. $M_{sophisticated,\ exciting}=3.08$ vs. $M_{sophisticated,\ sophisticated}=4.40$, F(1, 120)=20.20, $p<.001$, partial $\eta^2=.14$). Contrast analysis revealed that processing was more fluent when the exciting logo was animated excitingly and the sophisticated logo was animated sophisticatedly, as compared to the other conditions (F>9.12, $p<.01$). A main effect of logo was also noted ($M_{exciting}=4.43$ vs. $M_{sophisticated}=3.76$, F(1, 120)=4.67, $p<.05$, partial $\eta^2=.04$).

Mediation analysis Bootstrap estimation with 10,000 resamples (PROCESS model 8) confirmed that fluency mediates the moderated effect of animation on attitude, as indicated by the significant indirect effect of the highest order interaction (M=1.57, SE=.40, 95% CI=.82, 2.42). The indirect effect of animation on

attitude was significant for the exciting logo (95% CI= −1.44, −.34) and the sophisticated logo (95% CI=.24, 1.23). These results support hypothesis 3.

Discussion

Studies 3 and 4 provide additional insights into the influence of agent animation on brand attitude. The results indicate that consumers are able to interpret brand personality connotations arising from animation, and their response to the animation depends on the fit it has with other brand cues, such as slogans (Study 3) or logo graphics (Study 4). Additionally, mediation analyses support the notion that processing fluency underlies the favorable influence of animation on attitude.

Study 5

A final follow-up study was conducted with two practical goals: to test whether agent animation and the match with brand personality can influence choice behavior related to real brands in the marketplace and to explore whether the findings might extend from logo animation to the animation of related objects.

Pretest

Individual boxes of Godiva Milk Chocolate Pearls and M&M's Milk Chocolate Minis were chosen as the target stimuli for a choice experiment, based on the expectation that Godiva would be perceived as sophisticated while M&M's would be perceived as exciting. Given our initial concern that baseline preference might heavily skew toward Godiva, a pretest was conducted to assess baseline preference among individuals in our sample population. After considering a box of each, 56% of 55 undergraduate participants reported that they would choose the Godiva option. We thus concluded that there was enough variability. An additional pretest was conducted with 20 undergraduate participants to ascertain whether individuals in the sample population would categorize the brands in line with brand personality expectations. All 20 participants categorized Godiva as sophisticated, and all 20 participants categorized M&M's as exciting. We thus concluded that the stimuli were suitable in this regard as well.

Main study and results

One hundred and twenty-eight undergraduate students (57% male) participated in a choice experiment, in which the dependent variable was the choice between a box of Godiva Pearls and M&M's Minis. Four versions of a webpage were created, each of which featured an ad with an agent-animated box of Godiva or M&M's, and an ad with a static box of the other product (see Appendix 2 for a sample screen shot). Brand placement in the two ad spaces was randomized, so that each box of chocolates was featured with equal frequency in the different screen locations. The two animations utilized were the same sophisticated versus exciting agent animations from previous studies. In other words, the brand personality of the chocolate boxes were exciting versus sophisticated, and the animations were matched versus mismatched with these brand personalities. The study was a 2 (brand personality: exciting vs. sophisticated) × 2 (animation: matched vs. mismatched) between-subjects experiment.

The webpage was projected on a large screen in a classroom. After displaying the browser page for 10 s, the screen went blank. Before leaving the room, participants were asked to take a box of chocolates on the way out. Each individual's choice was recorded, and this measure served as the dependent variable. A binary logistic regression was conducted with brand personality, animation, and their interaction as predictors. Results revealed a significant brand personality x animation interaction (Wald χ^2=6.68, p<.05). No other effects were significant. Subsequent analyses were conducted to investigate the effect of animation on choice within brand personality conditions. When M&Ms was the animated brand, 50% chose M&M's when the animation was matched (i.e., exciting agent animation) versus 28% when the animation was mismatched (i.e., sophisticated agent animation; χ^2=3.22, p=.07). When Godiva was the animated brand, 81% chose Godiva when the animation was matched (i.e., sophisticated agent animation) versus 59 when the animation was mismatched (i.e., exciting agent animation; χ^2=3.67, p=.06). In other words, both within-condition differences were marginally significant, while the overall interaction was significant.

Discussion

These results provide evidence of the influence of agent animation on actual choice in the context of existing brands, and they further emphasize the need to match the animation with existing brand personality. Further, isolated logos were not animated in this study; the packages, with the logos prominently displayed on them, were animated. This provides some indication that the influences documented in this research may

obtain more broadly, rather than being strictly confined to isolated logos.

General discussion

Taken together, the six studies presented suggest that firms could benefit from logo animation, and from agent animation in particular. First, a pilot study demonstrates that there is little current use of logo animation, and especially agent animation, in the marketplace. Five main studies demonstrate that agent animation can serve as a general cue that aligns with dynamism, as well as a cue for specific brand personality traits, and that conceptual fluency mediates the effect of agent animation on brand evaluation. Thus, animation must be utilized strategically, taking into account considerations such as fit with the firm and consistency between brand cues. The main studies demonstrate the sensitivity of participants to such issues, showing that agent animation works better for dynamic rather than stable firms (Studies 1 and 2), synergistically combines with brand slogans or logos via conceptual fluency (Studies 3 and 4), and can even affect choice behavior for well-known brands (Study 5).

Theoretical and managerial implications

The marketing literature has highlighted the need for further research on the influence of logos (Cian et al. 2014; Hagtvedt 2011; Henderson et al. 2004; Janiszewski and Meyvis 2001; van der Lans et al. 2009). Other research has highlighted the need for further examination of animation effects within advertising and promotion (Yoo et al. 2004). The current research extends both streams and takes a preliminary step in exploring the effects of logo animation, building foundational theory in an under-investigated domain of marketing. A more nuanced view of animation in marketing is likely to become increasingly important for marketers and marketing scholars, as marketing content becomes increasingly dominated by graphical elements (Pieters and Wedel 2004; Wedel and Pieters 2008). By developing agent animation versus object animation, we contribute to this growing area of visual marketing.

One key implication for managers is that while logo animation may be useful in general, not all animation is created equal. The current research not only establishes the favorable influence that agent animation may have on desirable marketing variables, as compared with object animation or static logos, but it also provides preliminary guidelines for the strategic use of such animation. For instance, agent animation can be a low-cost tool to strengthen brand personality perceptions. For a favorable influence on brand attitude, however, the current findings indicate that it is necessary to match the personality conveyed by the animation with that suggested by other brand cues such as slogans or logo graphics. Indeed, the mediating role of conceptual fluency in the influence of animation on attitude serves to further emphasize the importance of holistic branding efforts in the current marketplace. While the role of fit has been highlighted in numerous other contexts, ranging from brand extensions to sponsorship activities (Carter and Curry 2013; Mazodier and Merunka 2012), it has not been explored in regard to animation. We show not only that consumers are able to gauge brand personality characteristics based on the animation of logos but also that they are able to match these characteristics to other brand cues, which in turn influence brand attitudes.

The current paucity of agent-animated brand logos in the marketplace suggests potential first-mover advantages for firms that can effectively utilize logo animations. For instance, the first brands to consistently use specific motions may cause these motions to be recognized and associated with them. If the understanding of movement combinations evolves sufficiently, it may even be possible to trademark certain motion sequences; tech companies have reportedly been patenting physical gestures for almost two decades (Newitz 2011). Advances in low-power and e-ink screen technologies also suggest that even print media and product packaging will soon be able to carry animation, thus eliminating one of the last barriers to the use of animated logos. From a managerial perspective, however, follow-up work should investigate the possible role of novelty in connection with logo animation. While it seems likely that early adopters of logo animation could gain first-mover advantages, it is uncertain whether such effects would diminish if the practice becomes widespread. Animation could presumably still function as a channel for communicating brand meaning, but future research might disentangle novelty effects from long-term effects associated with logo animation.

Limitations and directions for future research

Managerial recommendations should take into consideration some of the limitations of the current research. To avoid confounds, logos of fictitious brands were animated in isolation in most of the studies, but this also means that most marketplace contexts have not been tested. For example, would the results hold when the

logo is embedded in a video ad or other content? Will the benefits justify the cost of buying animated ad space? Future research may do more to test the boundaries and scope of the current findings.

This research conceptualizes agent animation as conveying to viewers a sense that the logo moves on its own in a lifelike fashion. Animation schemes were designed accordingly, and they were subjected to pretests and manipulation checks to ensure that they fit this conceptualization. However, further research is needed to fully map out the types of movements that individually or collaboratively evoke a sense of agency. In the meantime, managers may find it expedient to rely on animations designed to emulate movements observed in nature, as is often done in the movie industry. Beyond this it may be useful to create a typology of movements and begin mapping out the various perceptions that arise from them, including personality connotations. Such research could also include systematic theoretical consideration of the motions that comprise object animation. For instance, are they equal in their ability to influence brand attitudes? How might these motions interact with other variables, such as speed?

It is also important to note that the studies had participants make judgments about the brands based primarily on the logo animation. Aside from Study 5, this was done without prior brand experience or other branding cues beyond the logo or a slogan. Future work should explore the generalizability of these results to complex media contexts and investigate whether specific contextual dimensions may moderate the effects of logo animation. Likewise, the majority of response questions were focused on brand attitude; future work might examine downstream effects of logo animation on other marketing variables of interest. Study 5, which investigated choice behavior among real brands, also provided preliminary indications that the current findings extend beyond isolated logos to other brand elements. In this study, the animated elements were geometrically shaped packages with the logos prominently displayed on them. However, since no other branding information was displayed and the whole ad consisted of the animated product, one might reasonably refer to it as animation of the entire ad. This begs the question of what the scope and boundaries are for the current research. Are the animation effects restricted to logos and simple shapes with logos on them, or do they extend to complex shapes, to multiple elements, to entire ads, and perhaps to other branding materials? A great deal of future research is needed to answer these questions. It seems reasonable that the animation effects might be strongest for materials that are strongly representative of the brand, such as a logo. To the extent that such elements are associated with the brand's personality, it also seems likely that the issue of fit with the personality conveyed by the animation is especially important where they are concerned. However, if animation were applied to other branding information, perhaps the animation could more easily be used to mold brand personality perceptions. In general, given that animation research is in a very early stage, questions abound regarding what can be animated and what effects may arise from it.

The current research relies on exciting and sophisticated brand personalities, two of the more common personality constructs used in both research and practice (Aaker et al. 2004; Johar et al. 2005). These two personality constructs may also be easier to convey via animation compared to other constructs such as competence or intellectuality. Future research may map out the extent to which animations can successfully convey various other personality traits, or explore underlying dimensions that can help determine why some personality constructs may be easier to code into animation than others, as well as the impact this may have on the brand personality appeal (Freling et al. 2011). In addition to developing a typology of agency cues, future research could attempt to codify other motion cue characteristics. Perhaps specific motions are effective for certain personality traits or other perceptions, or certain motions are equally effective for abstract and anthropomorphic characters while others are not.

Future research may also investigate tradeoffs between abstract logos and anthropomorphic characters as to their ability to convey personality attributes via animation. It could be that the object-to-agent perceptual leap is easier with spokes-characters since their shapes are conducive to agent animation. However, it could also be that they have less to gain from animation, since spokes-characters already convey the perception of life via their physical shape. Further, an anthropomorphic character is likely to carry with it a number of other connotations that may be undesirable or unintended for the brand. It may be easier to isolate specific personality characteristics conveyed by the agent animation of a brand logo as compared to the appearance and movement of a brand character.

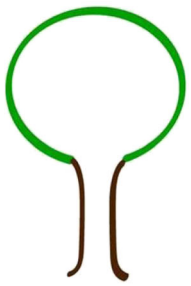
Finally, the favorable effects arising from agent animation suggest opportunities for animation within retail and shopping environments as well. For example, animation on in-store signage could draw attention to specials, deals, or items that are in oversupply. The personality-generating power of agent animation suggests that virtual shopping assistants need not be anthropomorphic in design. Further, the subtle animation of abstract or decorative elements may help in setting the general personality tone of retail environments, and particular agent animations may perhaps even become part of established trade dress. Future research could investigate whether logo animation retains its impact in a more visually complex environment such as a retail store or complex virtual storefront. Overall, the changing landscape of media and animation is likely to provide numerous avenues for future research in addition to the ones suggested here.

Appendix 1

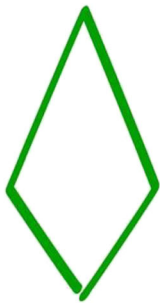
Logos used in studies 1–4

Exciting tree

Sophisticated tree



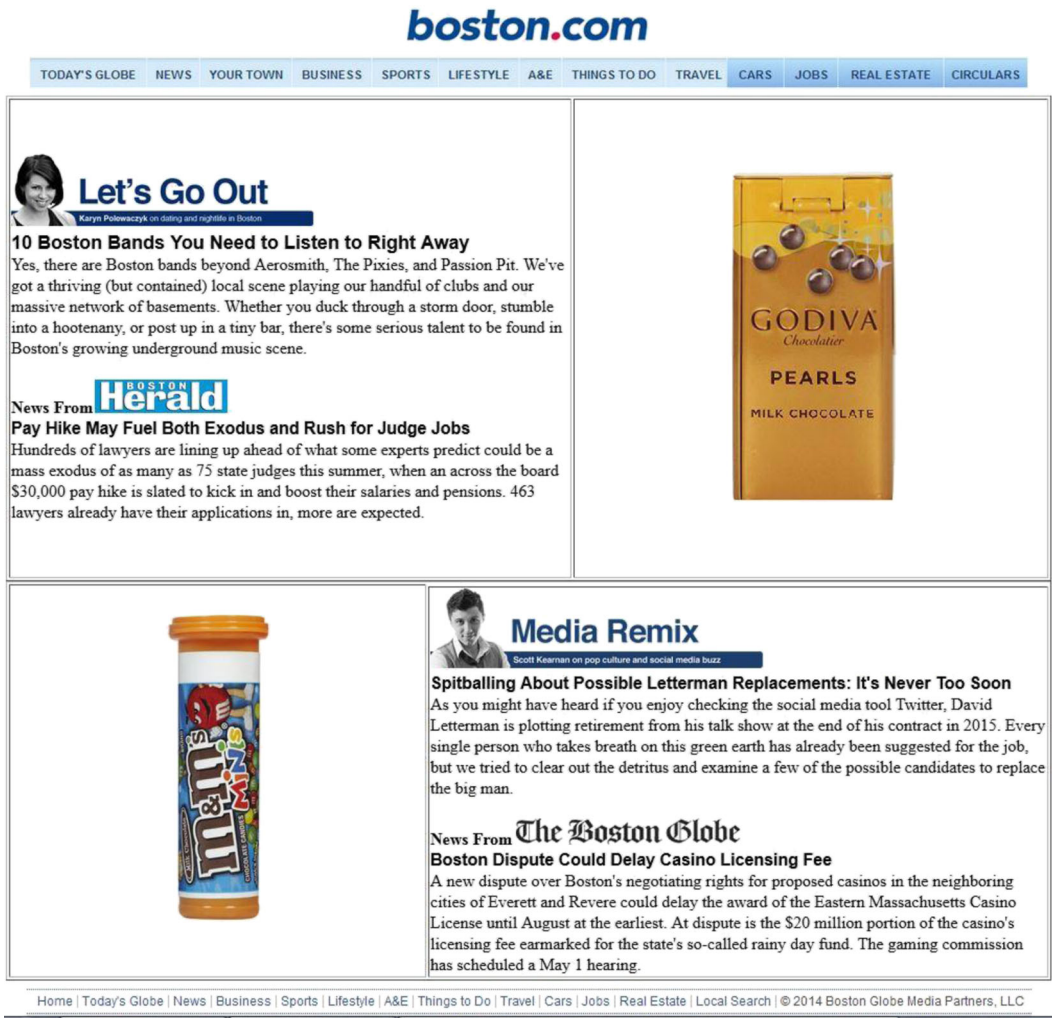
Neutral tree



Neutral gem

Appendix 2

Study 5: sample screen shot



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