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# Animated logos in mobile marketing communications: The roles of logo movement directions and trajectories

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## ABSTRACT

This research examines consumer preferences for two different features, movement directions and trajectories, of “animated logos” which are company logos moving across the screens of mobile devices (usually, in a GIF, Graphics Interchange Format). Results based on three experiments show, first, that consumers prefer logos moving upward over those moving downward regardless of the company's power and innovativeness. Second, when logos are associated with highly innovative companies, consumers demonstrate a stronger preference for logos moving in an up-right direction over an up-left direction, since they tend to associate different metaphorical meanings to them. Finally, consumers prefer animated logos moving along a convex up-right trajectory over those moving along either a concave or a linear up-right trajectory when the logos are associated with highly innovative companies. The article closes with implications and suggestions for marketers when designing animated logos in mobile marketing communications.

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## 1. Introduction

When we are happy, when we rejoice, we move our arms toward the sky: it's a universal sign when we are experiencing a very positive emotion. Everything which points up in the air seems preferable, metaphorically speaking, to what points downwards. That is why it is difficult to believe that going down does not bring a feeling of depression with it. Look at watch or clock images in advertisements: the hands are always at ten to two, because that projects a subtle smile. What would it seem if they were pointing at six thirty? The same with trajectories: people seem to prefer something positive increasing in an exponential way, rather than with a slower pace because, when we deal with something positive, we want it all and we want it now! Think of an interest rate on one of your investments: would you prefer it increasing in a fast or in a slow way? In this paper we deal with marketing communications and try to apply these concepts to the design of animated company logos. We do this in a mobile marketing environment, where animation and short movements are allowed by the Graphics Interchange Format (GIF), a widespread technology applied to electronic advertising.

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## 2. Mobile marketing and the role of logo movement directions

While the market for Internet-enabled mobile devices such as smartphones, tablets, and new mobile applications continues to expand worldwide, mobile marketing – that is, “the creation, communication, and delivery of customer value through the wireless, mobile medium” (Varnali, Toker, & Yilmaz, 2011, p. 5) remains a discipline at its early stages of development (Persaud & Azhar, 2012). Mobile advertising is one of the fastest-growing advertising formats: in 2013, global spending on mobile advertising was approximately \$16.7 billion and it is expected to exceed \$62.8 billion by 2017 (Bart, Stephen, & Sarvary, 2014). Currently, the most prevalent type of mobile advertising is mobile display advertising, which functions through banners on mobile web pages and in mobile applications, but mobile marketing practices are likely to change rapidly as mobile technology continues to evolve (Taylor & Lee, 2008). As the online environment becomes more and more competitive in the future, it will be increasingly important for marketers and practitioners to enhance brand distinctiveness and capacity to engage customers. It seems reasonable, in particular, to argue that logos – namely, visual identity elements expressing a company's values (e.g., Henderson & Cote, 1998) and a prominent part of its brand(s) (Miceli, Scopelliti, Raimondo, & Donato, 2014) – will acquire strategic importance in capturing consumer attention, creating vivid corporate brand identities, and fostering loyalty. In this regard, extant research suggests that animation may have a relevant role in attracting

customer attention in online environments (Fasolo, Misuraca, McClelland, & Cordaci, 2006). Recent studies have started to investigate the role of perceived movement of “static logos”, that is, visual signs that convey a sense of movement through their graphic characteristics (cf. Cian, Krishna, & Elder, 2014, 2015; Kohli, Suri, & Thakor, 2002). However research on “animated logos”, that is, those logos that actually move and which consumers can only see through a technological medium (e.g., a computer or a mobile device screen), remains scarce. Brasel and Hagtvedt (2015) analyzed over 400 television commercials aired in U.S. primetime programming and 300 banners of popular US websites, and found, specifically, that 60% of those commercials featured static logos, whereas over 90% of banners featured static logos. According to these authors, the limited diffusion of animated logos may be due to a “lock-in” effect on popular logos that were introduced when the print media was dominant and logo animation was not practicable. As a result, even companies that operate exclusively on the Internet use static logos and animated logos which typically are simple fade-in/fade-out or transition effects. In spite of this, mobile devices and the ubiquity of the Internet provide fertile grounds for the diffusion of animated logos. Hence, for companies interested in using them, it is important to know if they are actually able to engender a favorable attitude toward their brands and products and what specific characteristics determine their efficacy.

The present research aims to shed light on these issues by investigating whether consumer preference for animated logos depends on logo movement directions and trajectories, as people may associate more or less positive feelings to real life objects moving in specific directions or trajectories which are likely to convey specific meanings to consumers (cf. Ostinelli, Luna, & Ringberg, 2014). To the best of the authors' knowledge, real movement directions have never been examined in relation to animated logos. To close this gap, this research focuses on the mobile marketing context and investigates whether logo movement directions affect consumer preference for animated logos. In particular, this research investigates whether consumers have a stronger preference for logos moving in specific directions and with specific trajectories, and if such preferences vary on the basis of company power and company innovativeness. In doing so, this paper aims to garner suggestions for mobile marketers in designing animated logos that would be appealing to consumers.

The paper is organized as follows. The subsequent two sections review studies that have addressed the topic of logo movements as well as studies that have investigated the metaphorical meaning of directions. Following this, the results of three studies performed to investigate consumer preferences for specific animated logo movement directions and trajectories are presented. Finally, these results are discussed bringing out implications for mobile marketing strategies as well as avenues for future research.

### 3. Dynamic and animated logos

Research on logos movement is still in its infancy. The scarce literature on this topic has examined two specific types of logos: “dynamic logos” which are static logos conveying a sense of movement and “animated logos” that are actually able to move. Cian et al. (2014) showed that perceived movement in static logos (so-called *dynamic logos*) favorably influences brand attitudes by enhancing consumer engagement with the brand logo. They also showed that the congruence between perceived movement and brand/company characteristics (traditional vs. modern) acts as a moderator in this regard. Furthermore, Cian et al. (2015) found that warning sign icons with higher perceived movement suggest greater risk and increase attention and propensity to act compared to icons characterized by a lower degree of dynamism. Therefore, the incorporation of dynamic elements into icon design could foster responsible consumer behavior.

In contrast to logos conveying a sense of movement, animated logos actually move in space. Animation refers to a perception of “agency”, that is, an entity's capacity to take self-directed action, to move in a lifelike fashion. Brasel and Hagtvedt (2015) distinguish between “agent animation”, which gives viewers a sense that the logo moves of its own volition; and “object animation”, which does not. Agent animation connotes agency, i.e., 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 down vertically). Brasel and Hagtvedt (2015) report that agent animation encourages more favorable attitudes toward a “dynamic” firm (e.g. an entertainment company), but less favorable attitudes toward a “stable” firm (e.g., an insurance company). Furthermore, favorable attitudes arise when the brand personality suggested by the animation is consistent with other brand cues, such as brand slogans or the logo graphic. Despite these findings, Brasel and Hagtvedt (2015) did not investigate whether or not movement direction has an effect on consumer attitudes toward firms and their logos. Thus, a significant gap exists in the scant literature on logo movements.

## 4. Directionality and metaphorical perceptions

### 4.1. Vertical movements

Individuals' perception of things often derives from their direction. Popular expressions such as “feel up”, “come down to earth”, etc. highlight the circumstance(s) to which people tend to associate positive and negative meanings according to direction(s). The association of directions to judgment is well-established, since it is widely diffused in different fields. When describing ethics, a moral person may be described as “high-minded”, in contrast to an immoral one who may be defined as “underhanded”; when talking about power, a powerful person in a company is a “higher-up”. Furthermore, in the Bible, Heaven, the place destined for the righteous, associates with up, while Hell with down (Favazza, 2004) because, when portraying religious facts, God is associated with up (since it is known as the “Most high”, Lattimore, 1996) and Devil to down. But God and Devil concepts as space are not the only conceptual metaphors. Among others, power and success are concepts that are metaphorically described as vertical dimensions in physical space. A powerful person is usually depicted at the top of a hierarchy picture, and over-see others with a lower status. As Barsalou (1999) observes, mental representations of concepts are tied to their perceptual basis. Hence, people learn about things through sensory experiences. Thus, whereas describing concrete objects does not involve any particular association, individuals need to use metaphors involving physical domains when describing abstract concepts that cannot be perceived through the senses (DesCamp & Sweetser, 2005). That is why, when describing abstract things, common metaphors pair valence of values with verticality in space.

As metaphors allow people to make sense of abstract concepts, the pioneering work by Lundholm (1921) suggested that people represent affect on the basis of verticality. Reinforcing this concept, Meier and Robinson (2004) suggested that affect is grounded in sensorimotor perception, incepting that, when making evaluations, individuals tend to assume that objects high in visual space are good, while objects low in visual space are bad. More recently, Casasanto and Dijkstra (2010) pointed out that, when describing emotions, people often link positive valence with upward motion or position in space. This could explain why, in the attempt to evaluate their mood states, happy people maintain to “feel up” (while in contrast sad people state to “feel down”) and why, when asked to evaluate Facebook posts, contents perceived as good are typically given “thumbs up”. From the marketing literature, it is found that the location of objects and the direction of visual movements are likely to affect consumer evaluations of products and brands. For example, Van Rompay, De Vries, Bontekoe, and Tanja-Dijkstra (2012) ascertained that verticality cues foster perceptions of luxury.

They found, in particular, that upward camera angle leads to perceive a product as more prestigious compared to one on a downward camera angle. These authors also established that a vertically-oriented ad background triggers a higher price expectation than a horizontally-oriented ad background by means of the luxury perception. Van Rompay, Fransen, and Borgelink (2014) also revealed that upward movements trigger perceptions of a brand as more active (i.e., “dynamic” and “young”), finding analogous effects for presentation of product imagery in the top region of a product package. Sundar and Noseworthy (2014), focusing on logo location on packaging, demonstrated that, when a brand is viewed as a leader, positioning logo high leads consumers to better evaluate the brand. A counterintuitive result they found was that consumers prefer less powerful brands more when the brand logo is featured low rather than high on the brand’s packaging. However, this evidence may be a matter of calibration, since the shift in preference appeared to be a fluency effect derived from linking power with height.

#### 4.2. Horizontal movements

According to theories of metaphorical representations, analogous associations may happen with the horizontal dimension. Individuals often refer to time as a movement in a spatial perspective, from one (past) location to another (future) location. As a consequence, subjects – at least in Western cultures – map the past onto left space, and the future onto right space (Santiago, Lupáñez, Pérez, & Funes, 2007). Moreover, people tend to gesture from left to right when describing events that unfold in time (Núñez & Sweetser, 2006). Hence, time appears to be represented in a left-to-right spatially continuous line ranging from past (left) to future (right) (Ding, Feng, Cheng, Liu, & Fan, 2015), and different languages make use of this left-right axis to refer to temporal sequences of events (Emmorey, 2001). Chae and Hoegg (2013) observe that cultures that read from left to right possess a spatial representation of time, whereby the past is visualized on the left and the future is visualized on the right. This visualizing produces a metaphorical match between “left” and “past” and “right” and “future”. Obviously this process is reversed for consumers from cultures that read from right to left, such as Hebrew speakers. These authors demonstrate that placing certain products from left to right along the horizontal axis of an advertisement can improve consumer attitude toward the product. Specifically, they found that when consumers view advertisements in which the images of products involving a progression of time (e.g., self-improvement products) are positioned congruently with their spatial representation of time, they have more favorable attitudes toward the product than the opposite case. This effect also occurs for products for which time is a desired attribute, such as antiques. Cian et al. (2014) investigate this phenomenon with respect to dynamic logos and found that the metaphorical match between logo direction (i.e., forward vs. backward) and company presentation (i.e., innovative vs. traditional) leads to more favorable attitudes toward the brand than when there is a metaphorical mismatch. Specifically, they ascertained that the association between forward movements and innovative companies, and the association between backward movements and traditional company, determine more favorable attitudes toward brands than when there is a mismatch between movement and company presentations.

No research on visual movements, however, investigated possible differences between linear and non-linear trajectories. Thus, whether stimuli (products or logos) that move along concave (i.e., changing at a decreasing rate) or convex (i.e., changing at an increasing rate) directions associate with particular meanings is unknown. Also unknown: compared to stimuli moving along linear directions, are they more (or less) capable of positively affecting consumer attitudes toward firms?

## 5. Overview of studies

This research includes three studies. Since prior literature shows that people tend to associate positive meaning to upward direction, Study 1 examines whether consumers have a stronger preference for animated logos moving upward rather than downward, and if such a preference is affected by the power and innovativeness of companies. Study 1 hypothesizes that, when it comes to animation, the counterintuitive result in Sundar and Noseworthy (2014) does not apply in reality, as a company’s power (as well as its innovativeness) should not change the preference for the animated logo of any company going down rather than up. Study 2 examines whether consumers have a specific preference for logos moving linearly in an up-right rather than up-left direction, and if such a preference varies depending on a company’s innovativeness (as demonstrated for dynamic logos by Cian et al., 2014, when logos do not really move, but give an illusion of movement). As in Cian et al. (2014), the current study found that there was a consumer preference for linear up-right logo movements only for highly innovative companies. Finally, Study 3 demonstrates that consumers have a stronger preference for logos moving in an up-right (convex) trajectory rather than in a linear or up-right (concave) trajectory. Fig. 1 shows an example of animated logo movement directions and trajectory directions employed in each study.

## 6. Study 1

### 6.1. Design

Study 1’s design is a 2 (company power: low versus high)  $\times$  2 (logo movement direction: up versus down)  $\times$  2 (company innovativeness: low innovativeness versus high innovativeness) between-subjects factorial design, and aimed to assess if and how participants’ attitude toward animated logos changed across eight different treatment conditions. Company power, logo movement direction, and company innovativeness were manipulated. Attitude toward the logo was measured through an established scale (cf. Sujan & Bettman, 1989).

### 6.2. Procedure

A confederate who was blind to the study’s goal randomly selected a total of 513 subjects ( $M_{\text{age}} = 28$  years,  $SD = 9.86$ ) among the student population of a medium-sized Italian university. They were approached in public spaces of the campus (libraries, cafeterias, etc.) and invited to fill in an electronic questionnaire on a 10” unbranded tablet. The questionnaire instructed participants to evaluate “mock” ads for a company that was described as creating a new logo to promote one of its products. Two types of firms making widely used consumer products, specifically a watch and a perfume, were considered. These were selected from the set investigated by a previous research (Peluso, Yoon, Amatulli, & Guido, 2014) that examined consumer perceptions of traditional versus innovative products and identified the afore-mentioned product categories as familiar to most consumers and homogeneously bought by males and females. The questionnaire manipulated both the perceived company power and innovativeness of these firms. Company power was manipulated through a textual description of the company adapted from Sundar and Noseworthy (2014) and included in two different scenarios: one for a company with low power, the other for a company with high power (see Appendix 2 for details). Similarly, company innovativeness was manipulated through another textual description of the company included in two other scenarios: one for a low innovative company, the other for a highly innovative company. To increase the effectiveness of this manipulation, these two scenarios also included pictures of the products made by the described companies, namely watches and perfumes. Two different images of the same product were used in

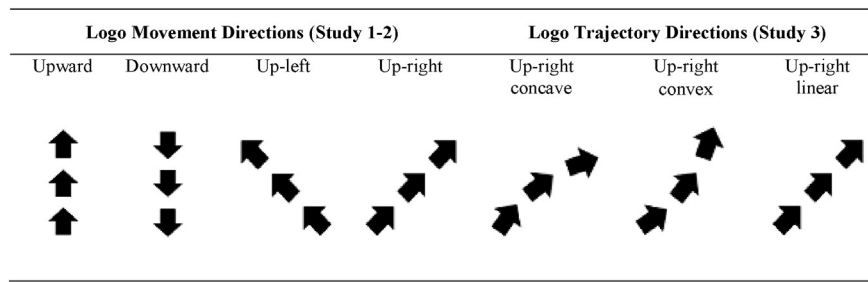


Fig. 1. Examples of logo movement and trajectory directions employed in the studies.

the survey: one depicting an innovative style product; the other depicting a traditional style product (see Appendix 3 for details). These pictures were tested in a previous research (Peluso et al., 2014) that distinguished the “traditional-style” versions from the “innovative-style” versions of the same products.

Participants were also instructed to imagine that the company intended to select a logo suitable for use in a mobile marketing campaign and were, therefore, asked to rate five possible animated logos by expressing their attitude toward them. Logos were randomly selected from a collection consisting of 30 black and white stylized logos that, building on Brasel and Hagtvedt (2015), were classified as: *human logos*, that is, logos reproducing typical human movements (e.g., the waving of arms; the movement of eyes); *agent logos*, that is, logos depicting real object having force of motion (e.g., an airplane); and *object logos*, that is, logos depicting abstract objects which do not have force of motion (e.g., an arrow symbol). The logos used in the studies are presented in Appendix 1. All logos were embedded in the electronic survey through GIF type files. GIF (Graphics Interchange Format) is a universally supported image technology, described as a lossless format suitable for graphics and file interchange due to its wide support and portability (Hu & Bagga, 2003; Miano, 1999).

Attitude toward the five selected animated logos was assessed through a 3-item scale (negative-positive; bad-good; unfavorable-favorable) adapted from Sujan and Bettman (1989) which has been used in previous studies on logos (e.g., Müller, Koehler, & Crettaz, 2013). This scale measured responses on 7-point Likert scales (Cronbach's alpha = 0.94).

### 6.3. Findings

A four-way ANOVA showed that no significant main effects or interaction effects were obtained for product category and company power scenario for each of the five logos. Results suggested that participants' attitudes toward the tested logos did not depend on company power (low versus high) or product stimuli (watch versus perfume). Thus, a two-way between-groups ANOVA was conducted to explore the impact of movement direction and company innovativeness on attitude toward each logo. For all logos, the analysis yielded significant main effects for logo direction ( $F_{\text{Human logo 1}}(1, 509) = 30.37, p < 0.001$ , partial  $\eta^2 = 0.06$ ;  $F_{\text{Human logo 2}}(1, 509) = 9.78, p < 0.01$ , partial  $\eta^2 = 0.02$ ;  $F_{\text{Agent logo 1}}(1, 509) = 59.54, p < 0.001$ , partial  $\eta^2 = 0.11$ ;  $F_{\text{Agent logo 2}}(1, 509) = 77.97, p < 0.001$ , partial  $\eta^2 = 0.13$ ;  $F_{\text{Object logo}}(1, 509) = 47.26, p < 0.01$ , partial  $\eta^2 = 0.09$ ), but not for company innovativeness. Additionally, for the Human logo 1 and the Agent logo 2, a significant interaction effect between logo movement direction and company innovativeness was ascertained (Table 1). Furthermore, planned contrasts (Table 2) revealed that upward movement significantly improved participants' attitude toward the logo for low innovative companies ( $t_{\text{Human logo 1}}(509) = 5.42, p < 0.001, r = 0.23$ ;  $t_{\text{Human logo 2}}(509) = 1.98, p < 0.05, r = 0.09$ ;  $t_{\text{Agent logo 1}}(509) = 4.94, p < 0.001, r = 0.21$ ;  $t_{\text{Agent logo 2}}(509) = 8.13, p < 0.001, r = 0.34$ ;  $t_{\text{Object logo}}(509) = 4.34, p < 0.001$ ; see Fig. 1 for details), as well as for highly innovative companies ( $t_{\text{Human logo 1}}(509) = 2.38, p < 0.05, r = 0.10$ ;  $t_{\text{Human logo 2}}(509) = 2.42, p < 0.05, r = 0.11$ ;  $t_{\text{Agent logo 1}}(509) = 5.97, p < 0.001, r = 0.26$ ;  $t_{\text{Agent logo 2}}(509) = 4.37, p < 0.05, r = 0.19$ ;  $t_{\text{Object logo}}(509) = 5.38, p < 0.001, r = 0.23$ ; see Fig. 2 for details).

Table 1  
ANOVA results for Study 1.

Logo	Source of variation	Sum of squares	df	Mean square	F-ratio	p
Human logo 1	Logo direction	54.15	1	54.15	30.37	0.000
	Company innovativeness	0.06	1	0.06	0.03	0.853
	Logo direction $\times$ company innovativeness	8.08	1	8.08	4.53	0.034
	Error	907.58	509	1.78		
Human logo 2	Logo direction	20.08	1	20.08	9.78	0.002
	Company innovativeness	2.22	1	2.22	1.08	0.300
	Logo direction $\times$ company innovativeness	0.37	1	0.37	0.18	0.673
	Error	1045.42	509	2.05		
Agent logo 1	Logo direction	122.33	1	122.33	59.54	0.000
	Company innovativeness	0.00	1	0.00	0.00	0.979
	Logo direction $\times$ company innovativeness	1.21	1	1.21	0.59	0.444
	Error	1045.72	509	2.05		
Agent logo 2	Logo direction	169.67	1	169.67	77.97	0.000
	Company innovativeness	0.13	1	0.13	0.06	0.808
	Logo direction $\times$ company innovativeness	14.93	1	14.93	6.86	0.009
	Error	1107.56	509	2.18		
Object logo	Logo direction	107.42	1	107.42	47.26	0.000
	Company innovativeness	0.00	1	0.00	0.00	0.987
	Logo direction $\times$ company innovativeness	1.33	1	1.33	0.59	0.444
	Error	1156.90	509	2.27		

**Table 2**  
Study 1: Planned contrasts for attitude toward the logo.

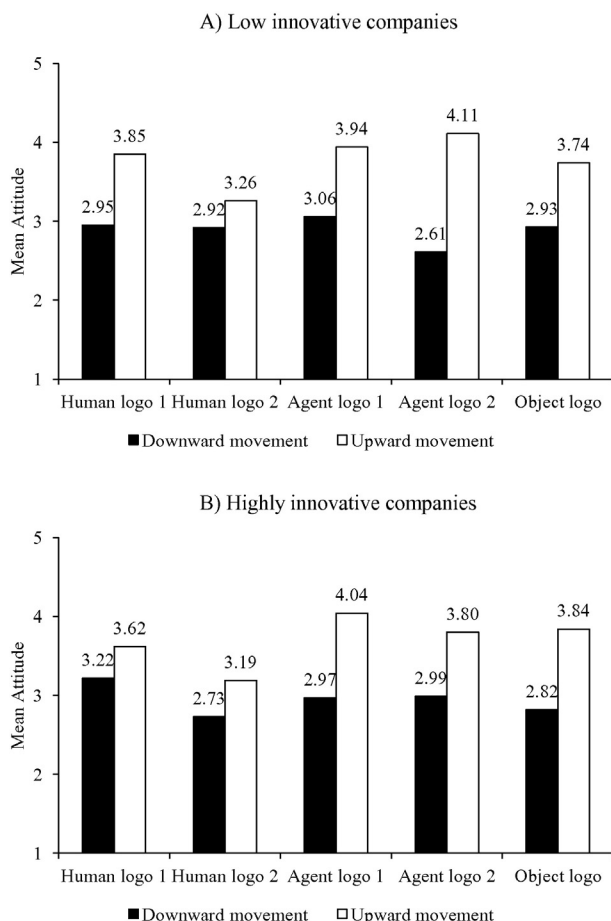
Logo	Logo movement direction/company innovativeness M (SD)			
	Upward/low innovativeness	Upward/high innovativeness	Downward/low innovativeness	Downward/high innovativeness
Human logo 1	3.85 (1.38) <sup>a</sup>	3.62 (1.42) <sup>b</sup>	2.95 (1.25) <sup>a</sup>	3.22 (1.29) <sup>b</sup>
Human logo 2	3.26 (1.36) <sup>a</sup>	3.19 (1.63) <sup>b</sup>	2.92 (1.42) <sup>a</sup>	2.73 (1.31) <sup>b</sup>
Agent logo 1	3.94 (1.46) <sup>a</sup>	4.04 (1.44) <sup>b</sup>	3.06 (1.46) <sup>a</sup>	2.97 (1.38) <sup>b</sup>
Agent logo 2	4.11 (1.55) <sup>a</sup>	3.80 (1.48) <sup>b</sup>	2.61 (1.40) <sup>a</sup>	2.99 (1.48) <sup>b</sup>
Object logo	3.74 (1.54) <sup>a</sup>	3.84 (1.68) <sup>b</sup>	2.93 (1.38) <sup>a</sup>	2.82 (1.40) <sup>b</sup>

Note: For each line, superscripts reporting a same letter denote a contrast significant at the .05 level.

**7. Study 2**

**7.1. Design**

Study 2’s design is a 2 (logo movement direction: up-left versus up-right) × 2 (company innovativeness: low innovativeness versus high innovativeness) between-subjects factorial design and assessed whether attitude toward an animated logo changes on the basis of movement direction and company innovativeness. Logo movement direction and company innovativeness were manipulated. Attitude toward the logo was measured through the scale used in Study 1.



**Fig. 2.** Study 1: Attitudes toward the tested logos for low and highly innovative companies.

**7.2. Procedure**

A second confederate blind to the study’s goal approached 237 real consumers ( $M_{age} = 33.43$  years,  $SD = 11.08$ ) at the exit of a shopping mall situated in an Italian city of about 100,000 inhabitants. As in Study 1, the confederate was equipped with a 10” unbranded tablet and asked consumers to participate in a market research study by filling in an electronic questionnaire using the tablet. The questionnaire was similar to the one used in Study 1, although, in light of Study 1’s results, the manipulation of company power was not included. This second survey used the same logos tested in Study 1 that, in this case, moved either in an “up-left” direction or an “up-right” direction. Thus, half of participants saw logos moving up-left and the other half saw logos moving up-right.

**7.3. Findings**

A two-way between-groups ANOVA was conducted to explore the impact of logo movement direction and company innovativeness on attitude toward each logo (Table 3).

For all logos, the analysis yielded significant main effects for logo direction ( $F_{Human\ logo\ 1} (1, 233) = 3.98, p < 0.05, \text{partial } \eta^2 = 0.02$ ;  $F_{Human\ logo\ 2} (1, 233) = 4.46, p < 0.05, \text{partial } \eta^2 = 0.02$ ;  $F_{Agent\ logo\ 1} (1, 233) = 4.43, p < 0.05, \text{partial } \eta^2 = 0.02$ ;  $F_{Agent\ logo\ 2} (1, 233) = 6.31, p < 0.05, \text{partial } \eta^2 = 0.03$ ;  $F_{Object\ logo} (1, 233) = 8.27, p < 0.01, \text{partial } \eta^2 = 0.03$ ). Furthermore, for the human logos, the Agent logo 1, and the Object logo, a significant interaction effect between logo direction and company innovativeness was ascertained ( $F_{Human\ logo\ 1} (1, 233) = 11.20, p < 0.05, \text{partial } \eta^2 = 0.02$ ;  $F_{Human\ logo\ 2} (1, 233) = 7.08, p < 0.05, \text{partial } \eta^2 = 0.03$ ;  $F_{Agent\ logo\ 1} (1, 233) = 7.79, p < 0.01, \text{partial } \eta^2 = 0.03$ ;  $F_{Object\ logo} (1, 233) = 5.50, p < 0.05, \text{partial } \eta^2 = 0.02$ ). As expected, for all logos, planned contrasts (Table 4) revealed that up-right movement significantly improved respondents’ attitude toward the logo for those in the “highly innovative company” condition ( $t_{Human\ logo\ 1} (233) = -3.03, p < 0.01, r = 0.19$ ;  $t_{Human\ logo\ 2} (233) = -3.35, p < 0.01, r = 0.21$ ;  $t_{Agent\ logo\ 1} (233) = -3.44, p < 0.01, r = 0.22$ ;  $t_{Agent\ logo\ 2} (233) = -2.15, p < 0.05, r = 0.14$ ;  $t_{Object\ logo} (233) = -3.67, p < 0.001, r = 0.23$ ), but not for those in the “low innovative company” condition ( $t_{Human\ logo\ 1} (233) = 0.23, p = 0.817$ ;  $t_{Human\ logo\ 2} (233) = 0.39, p = 0.697$ ;  $t_{Agent\ logo\ 1} (233) = 0.49, p = 0.626$ ;  $t_{Agent\ logo\ 2} (233) = -1.39, p = 0.165$ ;  $t_{Object\ logo} (233) = -0.38, p = 0.706$ ; see Fig. 3 for details).

**8. Study 3**

**8.1. Design**

Study 3 was designed as a between-subjects experiment and assessed whether, with respect to innovative companies, logos moving along a convex up-right direction are preferred over logos moving either in a concave or a linear up-right direction. To corroborate the results obtained in Study 2, it was also assessed whether logos moving along a convex up-right trajectory are preferred over those moving along convex, concave, and linear up-left trajectory. Attitude toward the logo was measured through the same scale used in our previous studies.

**8.2. Procedure**

A third confederate, blind to the study’s goal, used a 10” unbranded tablet to administer an online questionnaire to a random sample of consumers approached at the exit of a shopping center located in an Italian city of about 100,000 inhabitants different from the one in Study 2. The confederate collected 333 usable questionnaire (mean age of participants: 35 years,  $SD = 11.44$ ). The questionnaire instructed participants to imagine that an innovative company was about to create

**Table 3**  
ANOVA results for Study 2.

Logo	Source of variation	Sum of Squares	df	Mean Square	F-ratio	p
Human logo 1	Logo direction	8.27	1	8.27	3.98	0.047
	Company innovativeness	6.86	1	6.86	3.30	0.071
	Logo direction × company innovativeness	11.20	1	11.20	5.39	0.021
	Error	484.19	233	2.08		
Human logo 2	Logo direction	9.80	1	9.80	4.46	0.036
	Company innovativeness	0.21	1	0.21	0.10	0.756
	Logo direction × company innovativeness	15.54	1	15.54	7.08	0.008
	Error	511.85	233	2.20		
Agent logo 1	Logo direction	9.12	1	9.12	4.43	0.036
	Company innovativeness	4.28	1	4.28	2.08	0.151
	Logo direction × company innovativeness	16.02	1	16.02	7.79	0.006
	Error	479.30	233	2.06		
Agent logo 2	Logo direction	13.91	1	13.91	6.31	0.013
	Company innovativeness	24.70	1	24.70	11.20	0.001
	Logo direction × company innovativeness	0.68	1	0.68	0.31	0.580
	Error	513.99	233	2.21		
Object logo	Logo direction	19.36	1	19.36	8.27	0.004
	Company innovativeness	0.15	1	0.15	0.06	0.800
	Logo direction × company innovativeness	12.87	1	12.87	5.50	0.020
	Error	545.26	233	2.34		

a new logo to promote one of its products and asked them to rate two logos selected from the ones tested in Study 1 and Study 2. The Agent logo 1 and the Object logo were chosen to respectively represent stimuli that move of their own volition and stimuli which do not (Brasel & Hagtvedt, 2015). Participants saw each logo moving along one of the six trajectories considered in this study: convex up-right, concave up-right, linear up-right, convex up-left, concave up-left, and linear up-left.

8.3. Findings

A one-way between-groups ANOVA was conducted to explore the impact of logo trajectory on mean attitude toward each logo (Table 5). For both logos, the analysis yielded significant effects of logo trajectory ( $F_{Agent\ logo\ 1\ (5,\ 327)} = 4.04, p < 0.01, \text{partial } \eta^2 = 0.06; F_{Object\ logo\ (5,\ 327)} = 4.08, p < 0.01, \text{partial } \eta^2 = 0.06$ ). Planned contrasts (Table 6) revealed that, consistent with the results obtained in Study 2, logos moving along an up-right direction were preferred over those moving along an up-left direction, for both the convex ( $t_{Agent\ logo\ 1\ (327)} = -3.25, p < 0.01, r = 0.18; t_{Object\ logo\ (327)} = -3.48, p < 0.01, r = 0.19$ ) and the concave ( $t_{Agent\ logo\ 1\ (327)} = -2.18, p < 0.05, r = 0.12; t_{Object\ logo\ (327)} = -1.97, p < 0.05, r = 0.11$ ) trajectories. Furthermore, planned contrasts revealed that up-right convex trajectory significantly improved respondents' mean attitude toward

the logo when compared to up-right concave trajectory ( $t_{Agent\ logo\ 1\ (327)} = -2.14, p < 0.05, r = 0.12; t_{Object\ logo\ (327)} = -2.18, p < 0.05, r = 0.12$ ), and up-right linear trajectory ( $t_{Agent\ logo\ 1\ (327)} = 2.40, p < 0.05, r = 0.13; t_{Object\ logo\ (327)} = 2.55, p < 0.05, r = 0.14$ ; see Fig. 4 for details). This latter result indicates that logos moving

**Table 4**  
Study 2: Planned contrasts for attitude toward the logo.

Logo	Logo movement direction/company innovativeness M (SD)			
	Up-left/low innovativeness	Up-left/high innovativeness	Up-right/low innovativeness	Up-right/high innovativeness
Human logo 1	3.79 (1.46)	3.69 (1.54) <sup>a</sup>	3.73 (1.27) <sup>b</sup>	4.50 (1.49) <sup>a b</sup>
Human logo 2	3.41 (1.49)	2.95 (1.15) <sup>a</sup>	3.30 (1.66) <sup>b</sup>	3.87 (1.56) <sup>a b</sup>
Agent logo 1	4.22 (1.50)	3.97 (1.41) <sup>a</sup>	4.09 (1.52) <sup>b</sup>	4.88 (1.29) <sup>a b</sup>
Agent logo 2	3.59 (1.47) <sup>c</sup>	4.13 (1.63) <sup>a c</sup>	3.97 (1.56) <sup>b</sup>	4.72 (1.23) <sup>a b</sup>
Object logo	3.54 (1.52)	3.13 (1.26) <sup>a</sup>	3.65 (1.63)	4.17 (1.66) <sup>a</sup>

Note: For each line, superscripts reporting the same letter denote a contrast significant at the .05 level.

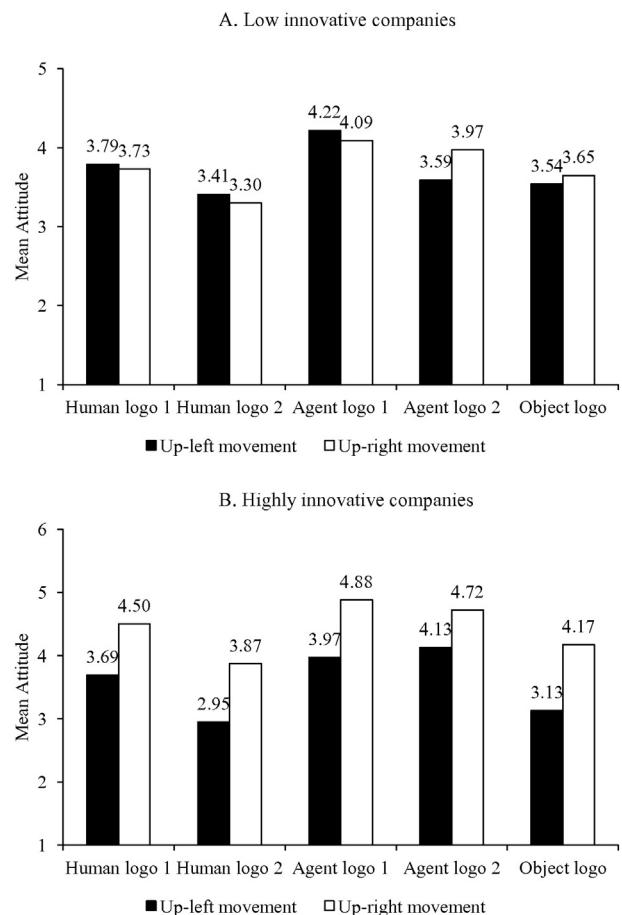


Fig. 3. Study 2: Attitudes toward the tested logos for low and highly innovative companies.

**Table 5**  
ANOVA results for Study 3.

Logo		Sum of squares	df	Mean square	F-ratio	p
Agent logo	Between groups	36.65	5	7.33	4.04	0.001
	Within groups	593.37	327	1.82		
	Total	630.01	332			
Object logo	Between groups	46.02	5	9.20	4.08	0.001
	Within groups	736.89	327	2.25		
	Total	782.91	332			

**Table 6**  
Study 3: Planned contrasts for attitude toward the logo.

Logo	Logo trajectory direction M (SD)					
	Up-left concave	Up-left linear	Up-left convex	Up-right concave	Up-right linear	Up-right convex
Agent logo	3.46 (1.52) <sup>a</sup>	3.86 (1.41)	3.70 (1.46) <sup>b</sup>	4.01 (1.15) <sup>a c</sup>	3.93 (1.33) <sup>d</sup>	4.55 (1.17) <sup>bcd</sup>
Object logo	3.33 (1.58) <sup>a</sup>	3.69 (1.32)	3.53 (1.57) <sup>b</sup>	3.89 (1.40) <sup>a c</sup>	3.77 (1.54) <sup>d</sup>	4.50 (1.57) <sup>bcd</sup>

Note: For each line, superscripts reporting the same letter denote a contrast significant at the .05 level.

along an up-right convex trajectory are likely to be particularly effective in delivering the brand image of innovative companies to consumers.

## 9. General discussion

This research examines how consumer preferences for animated logos (i.e., those company logos moving across the screens of mobile devices) may vary according to movement directions and trajectories. Moving from the metaphorical meaning of directions, this research aimed to provide mobile marketers with useful suggestion for the design of animated logos and, to achieve this goal, investigated whether specific movement directions and trajectories are capable of improving consumer attitude toward an animated logo.

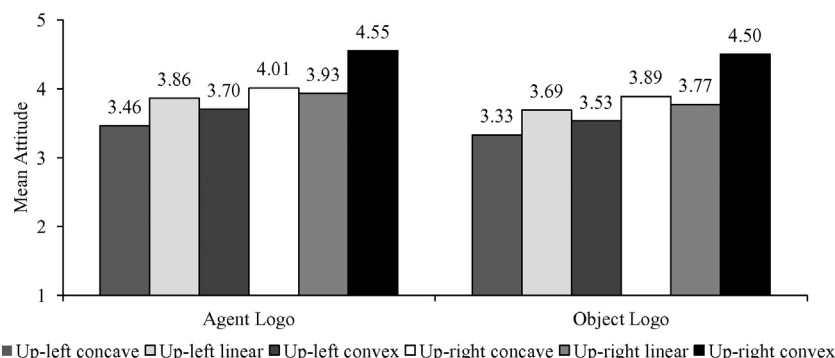
Results suggest, first of all, that upward movements are preferred over downward movements regardless of specific companies' features considered in the research, namely company power and innovativeness. Indeed, in mainstream culture, people associate upward direction with positive meaning. Individuals tend to move arms toward the sky as a universal sign of rejoicing, and the association of positive mood states and height is also widespread in common language (Meier & Robinson, 2006). Expressions as "reach the top" or "climb the ladder" implicitly suggest a verticality dimension in which success and positive value are situated on the peak. These metaphors, which ground positive meanings in a vertical spatial orientation, enlighten the way people think about affect-related concepts. This explains why consumers prefer

companies holding upward oriented logos. This evidence also appears to be in accordance with extant research in psychology as well as in marketing, as consumers tend to associate height with success and power (Schubert, 2005; Sundar & Noseworthy, 2014). Furthermore, that priming the company power has no effect on consumers' attitude toward logos stresses the extreme importance of logo directionality in affecting consumers' attitude toward logos, suggesting that consumers' preference for upward-oriented logos is strongly rooted in their perceptions.

Second, this research reveals that, when logos are associated with highly innovative companies, consumers demonstrate a stronger preference for logos moving in an up-right direction over an up-left direction, as they tend to associate a different metaphorical meaning to them. Since consumers hold a representation of time anchored along a spatial horizontal continuum, where time flows from one extremity (past) to the other (future), rightward-oriented logos induce a sensation of being oriented toward the future. Thus, consumers associate innovativeness, seen here as a company's inclination to engage in innovative behavior (Menguc & Auh, 2006), to the right extreme of the time flow (right direction). Consistent with the above, this research revealed a stronger preference for logos moving in an up-right direction in contrast to up-left direction.

Third, the findings reveal that, for companies that are perceived as highly innovative, up-right convex trajectory directions are preferred over other possible movement directions (concave and linear up-right trajectory). This finding suggests that consumer tend to prefer something positive which increases in an exponential way: the faster increasing rate showed by a convex trajectory over a concave or linear one makes consumers prefer this logo, probably suggesting to them a quicker way to reach the top. This may be of interest to all companies that aim to reach consumers via mobile applications, and may be particularly meaningful for companies that operate in economic sectors in which innovation has a critical role, such as communication, transportation, hi-tech production, and so on. It could also be of critical importance in bank advertising, as marketers employed in this industry make abundant use of charts explaining growth rates in commercials and web advertising.

This research contributes to the nascent literature on animated ads and logos in several ways. Previous studies focused largely on animated banner ads and found that they have higher click-through rates than static ads (Marx, 1996), and that animated advertising has better attention-grabbing capabilities, and generates higher recall and favorable attitude toward banners (Yoo, Kim, & Stout, 2004). However, despite the recognized importance of logos in advertising, there is a paucity of information on how animated logos are processed by consumers and on how the type of animation may influence consumer preferences. It is also important to note that, to date, studies on visual movement direction have only considered print advertisements (e.g., Van Rompay et al., 2012; Van Rompay et al., 2014) and static logos (Cian et al., 2014, 2015), but not animated logos. Consistent



**Fig. 4.** Study 3: Attitudes toward the tested logos for different trajectories.

with the findings of Van Rompay et al. (2014), who report that upward movements can be associated with “active” brands, and with the “future-right” connection emphasized by Chae and Hoegg (2013), we have established that animated logos moving in an up-right direction appear to associate with company innovativeness. Furthermore, by establishing that convex up-right trajectories are preferred over linear and concave up-right ones, we have also enabled drawing inferences regarding the specific “path” that animated logos could follow to convey a sense of innovativeness. Examples of popular logos characterized by this path are those used by Intel, Twitter, the NASA agency, all of which, however, are essentially static logos whose perceived innovativeness could be increased by adding elements moving along a convex up-right trajectory.

## 10. Theoretical and managerial implications

Due to the pervasive diffusion of mobile devices, companies are seeking to implement new forms of communication that enable a high level of user engagement (Calder, Malthouse, & Schaedel, 2009; Zhao & Balagué, 2015). They aim, in particular, to use forms of communication better tailored to consumer interests and consumption contexts than traditional advertising messages (Atkinson, 2013; Rohm & Sultan, 2006). From this perspective, animation can be considered as a strategic feature of mobile and web advertising: embedded moving images may improve the effects stemming from persuasive messages showed on the screen (cf. Ellsworth & Ellsworth, 1995). Considering the rapid growth of mobile devices and smartphone application users (which results in increased amount of time spent looking at interactive screens), animated logos may become strategic elements in a new mobile marketing environment characterized by overabundance of stimuli.

At a global level, the findings from this research may provide practitioners in the mobile marketing industry with useful guidelines to properly develop mobile marketing applications and maximize the effectiveness of marketing communication. In the mobile marketing environment, understanding that concepts perceived by consumers are organized in spatial metaphors, defined by Lakoff and Johnson (1980) as orientation metaphors, may be fundamentally important. People speak about happiness as something to achieve, to chase, or to pursue, underlining the necessity to move along an ideal direction, and the polar opposition “up-down” seems integral in physical and cultural experiences. Erect posture (in contrast with drooping one) goes along with positive emotional states, and there is an overall coherence in spatial metaphors which allocate positive values (happy is up, healthy is up, alive is up) to upward direction. Furthermore, evidence for an association between up and positive values comes from research showing that positive words are evaluated faster when presented in the upper part of the screen, whereas for negative words the opposite is true (Meier & Robinson, 2004). Consequently, an animation which reproduces a directional movement may be fundamentally biased, and upward movement automatically relates to positive valence (Koch, Glawe, & Holt, 2015). This perspective is why the image of winners expressing their mood state by lifting their arms toward the sky (in a gesture of momentum that leads them to rise up and seem higher than others) inspires happiness. Similarly, as this research has established, a logo whose animation is oriented upward conveys a positive idea, associating the image of the brand to the metaphorical associations linked to verticality, and thus promoting a positive attitude in the mind of the consumer. In the same way, the faster increasing rate showed by a convex trajectory in an animated logo, elicits the idea that promised or advertised benefits may be gained in a shorter time in the consumer's mind, and this may result in a greater propensity to prefer that brand.

Marketers should not overlook the metaphorical associations that the design of a logo may elicit since the animation (with its possible movements and trajectories) becomes a distinctive feature and the chance to pictorially express the meaning of the company. Google,

the world's third most valuable brand (Badenhausen, 2015), holding one of the most iconic brand logos of all time (Cohn & Bromell, 2013) has already taken the route to change. The new Google logo, unveiled in September 2015, reflects a world focused on mobile devices; it has shifted from a static logo to an animated figure that can be viewed only on screens. Even though in this case animation should only reflect the searching action (the six letters of “Google” transform in four dots that morph and orbit when the search engine is called to action), it seems clear that the animated logo may be useful to grab consumer attention in a mobile landscape where an instant appears to be more valuable than ever (Oremus, 2015). Thus, a concluding lesson for marketers is that a logo not only encloses the values and the mission of a company, but also could present, via its trajectory depicted by its graphical elements, a metaphorical way to success.

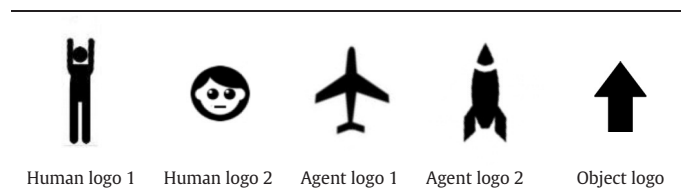
## 11. Limitations and future research

First, across all three studies the sample subjects were relatively young. While this jives with reality in the sense that younger people vis-à-vis older folks use mobile devices (cf. Guido, 2014), this nevertheless limits external validity. Thus, future studies could focus on other age-cohorts of the population. Future research could also investigate whether or not logo movement direction positively affects consumer behavioral reaction to exposure to animated logos. Investigating whether consumers are willing (or not) to pay more for products/services featuring logos moving upward and along an up-right convex direction than products/services featuring logos moving along other movement directions would be interesting. Such research may be useful to firms to potentially help them in enhancing the contribution of their logos to their overall economic performance (Park, Eisingerich, Pol, & Park, 2013). Considering that consumers have different propensity to respond favorably to mobile advertising and use their mobile devices, future research could assess the effectiveness of logo movement direction with respect to different mobile consumers' segments (Goneos-Malka, Strasheim, & Grobler, 2014; Hamka, Bouwman, De Reuver, & Kroesen, 2014). Finally, future studies could also examine the impact of cultural factors in the context of the current research. Indeed, previous research (e.g., Choi, Hwang, & McMillan, 2008; Liu, Sinkovics, Pezderka, & Haghirian, 2012) detected cultural differences in terms of perceived interactivity and perceived value of mobile advertising.

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## Appendix 1. Logos used in the research



## Appendix 2. Manipulation of company power

A. Scenario for low power company: “Established in 1951, the company producing the watch you see above has its origins in Dusseldorf. The founder opened a small factory. In the beginning he struggled to gain recognition, but through perseverance and hard



work, he was able to ship his products throughout Germany, and eventually, expanded across Europe. This company remains a rather small player with only 3% of the European watch (perfume) market, and thus continues to be Germany's best kept secret. Due to its desire for growth, management is considering entering the Asian market."

B. Scenario for high power company: "Established in 1951, the company producing the watch you see above has its origins in Dusseldorf. The founder opened a small factory. It didn't take long before he knew he had a winner. He had great success shipping his products throughout Germany, and soon after, expanded across Europe. This company remains a major player with 53% of the European watch (perfume) market. Due to its incredible following in the European market, management is considering entering the Asian market."

### Appendix 3. Manipulation of company innovativeness

A. Scenario for low innovative companies: "The company that makes the watch (perfume) you see in the picture has a traditional manufacturing approach and uses traditional materials. Its products have a classic style inspired by the past."



B. Scenario for highly innovative companies: "The company that makes the watch (perfume) you see in the picture below has an innovative manufacturing approach and uses innovative materials. Its products have a cutting-edge style inspired by the future."



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