

1. Introduction

It will not be coming soon. Mobile marketing is already here. According to Cisco's Visual Networking Index Mobile Data Traffic Forecast (2012), by 2016 there will be more than 10 billion mobile-connected devices. Mobile marketing advertising will account for at least 50% of marketing budgets in 2017 (Experian Marketing Services, 2012). There is an almost unlimited world of possibilities for brands to be mobile. Among them, we can emphasize its ability to attract consumers' attention and to establish a "one-to-one dialogue" with them (Kavassalis et al. 2003). Also, under 3D technology, mobile communication is able to offer always-on services with interactive and location-based applications (Perlado and Barwise 2004). Nevertheless, there is little empirical evidence as to how mobile advertising works in currently prevailing mobile technology (Okazaki, Katsukura and Nishiyama 2007).

Regarding traditional advertising, the role of mental imagery has been studied extensively and has drawn increasing interest from researchers (Bone and Ellen 1992; Babin and Burns 1997; Rodero 2010). The relevance of imagery is due to a number of reasons, including its influence on several cognitive and affective responses to the advertising message. Imagery is positioned as a mediator of the effect of different tactics used in advertising. Studies report that the generation of mental imagery enhances recall, brand attitude and attitude towards the ad (Bone and Ellen 1992; Burns, et al. 1993; Unnava et al. 1996; Babin and Burns 1997), attention (Rodero 2010), brand beliefs, brand recall (Mikhailitchenko, et al. 2009), intentions (Argyriou 2012) or even the duration of positive feelings (Lee and Qiu 2009).

Communication theory widely believed that qualitative aspects of media affect audience reaction (Percy and Rossiter, 1980, Stewart and Ward, 1994) thus mobile devices features combined with its huge growth in market and advertising investment, justify the goal of this research: to explore the role played by mental imagery in the mobile advertising context. From the technical point of view –backlit screen size– and from its usage –personal and ultraportable device, interactive and sensitive to location– (Shankar and Sridhar, 2009), mobiles differs from other media which makes convenient the study if the role played by mental imagery in traditional advertising can also be transferred to this emergent media.

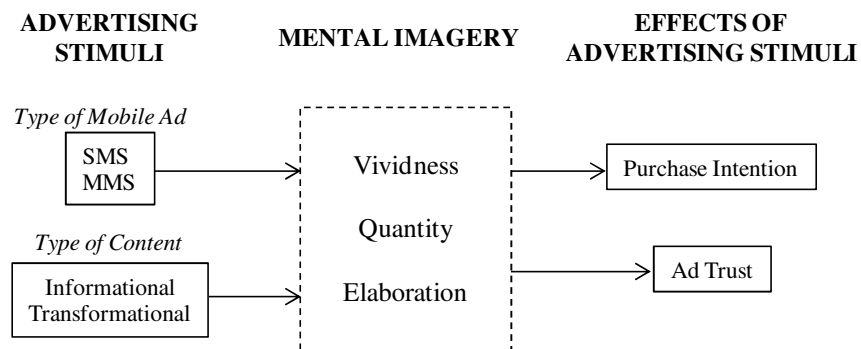
In addition, to ensure that the advertising fulfills its role, consumers should be able to trust the message they receive (Li and Miniard 2006). Some specific studies show that in the mobile domain, ad trust affects mobile campaign recall (Okazaki, Kutsukura and Nishiyama 2007). It is known that consumers' trust differs by media type, and is significantly lower for digital advertising (Soh, Reid and Whitehill 2007).

Experts report a hesitancy to use this emerging medium due to lack of experience with its use and how it communicates. In fact, according to Nielsen's latest Global Trust in Advertising report (2012), mobile phone advertising rated the lowest level of trust amongst all media. Scholars also warn that even nowadays, consumer still perceive their mobile device to be for

1 personal communication. Acceptance can be enhanced among other factors by trust-building
 2 (Watson, McCarthy and Rowley, 2013).

3 Therefore, the focal point of this article is to explore the mental imagery in mobile media
 4 elicited by advertising stimuli and its effect on consumer trust and on purchase intention. Our
 5 research questions are: Does mental imagery work on mobile media as it does on traditional
 6 media? If one of the advertising goals is to provoke behavioral intention, would it not be more
 7 efficient to boost behavioral intention if subjects experience a self-related imagery instead of
 8 mental imagery focused on the product? And lastly, can we enhance the trustfulness of the
 9 messages by means of the imagery they elicit?

10 **Figure 1.** Framework for the mediating role of mental imagery in mobile advertising



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 13
 14 There is no research to date in the mobile domain into mental imagery and its impact on trust
 15 and purchase intention. The present study therefore adds value to the literature in a mobile
 16 context which is scarce. It does this by firstly, verifying the transfer of knowledge on mental
 17 imagery to mobile media; secondly, by investigating the mediating role of mental imagery and
 18 its ability to exert a positive influence on ad trust; and thirdly, this research contributes to the
 19 study of the antecedents of behavioral intention in mobile marketing.

20 To carry out the empirical work, since the objective of this research is to analyze mental
 21 imagery elicited by mobile ads, we have chosen a laboratory experimental design which
 22 compares SMS¹ with MMS².

23 This paper is organized as follows: first the background literature on mental imagery is covered,
 24 followed by the theoretical framework. Then, research hypotheses are proposed and a
 25 description of the research methodology and its results is provided. The last sections discuss the

¹ SMS is a text-only message up to 160 Latin characters. It does not support any rich media; however some mobile phones with click-to-call or click-to-web capability will display colored links and underlining of URLs and phone numbers. The font size is entirely controlled by the mobile phone and is not under control of the advertiser or publisher.

² Multimedia Messaging Service (MMS) is a rich media messaging service that can include graphics, photos, audio, video and text. For the study we used an MMS Rectangle Ad. A color graphics file JPG formats plus optional text ad unit filling all of an MMS slide.

1 results and implications of the research and suggest potentially fruitful topics of future research
2 in this area.

3 **2. Theoretical backgrounds and hypothesis development**

4 The purchase of a product is often the purchase of an experience that will be provided by the
5 possession of a certain product (Pine and Gilmore 1998). For this reason, the consumer needs to
6 estimate the probability that future purchases meet the experiential expectations they have. The
7 customer then tends to imagine what it would feel like to use or to consume the product
8 (Schifferstein and Spence 2008) based on advertising, catalogs or information from virtual
9 stores. The challenge for marketing strategists is to perform a suitable stimulus that elicits vivid,
10 extensive and elaborate mental imagery that is both trustworthy and appealing. In these
11 situations where products cannot be experienced physically, eliciting mental imagery becomes
12 critical in order to influence advertising effectiveness and consumer behavior (Li, Daugherty
13 and Biocca 2003).

14 MacInnis and Price (1987) defined this mental imagery as “*a process by which nonverbal*
15 *information is represented in working memory*”, sometimes referred to as “visualizing” or
16 seeing in the mind’s eye. This process falls on an elaboration continuum that ranges from
17 retrieving or recalling an event that actually did occur (*historic imagery*) to processes involving
18 multiple concepts and constructions based on creative thinking or daydreaming (*fantasy*
19 *imagery*), as stated by Hirschman and Holbrook (1982). Mental imagery comprises different
20 attributes such as vividness, quantity and elaboration (Babin and Burns 1998). While vividness
21 refers to the clarity with which the individual experiences an image and taps the quality aspects
22 of evoked imagery (Marks 1973), imagery quantity is the number of images that come to mind
23 while processing information (McGill and Anand 1989); elaboration refers the activation of
24 information in the production of mental imagery beyond what is provided by the stimulus
25 (Babin and Burns 1998).

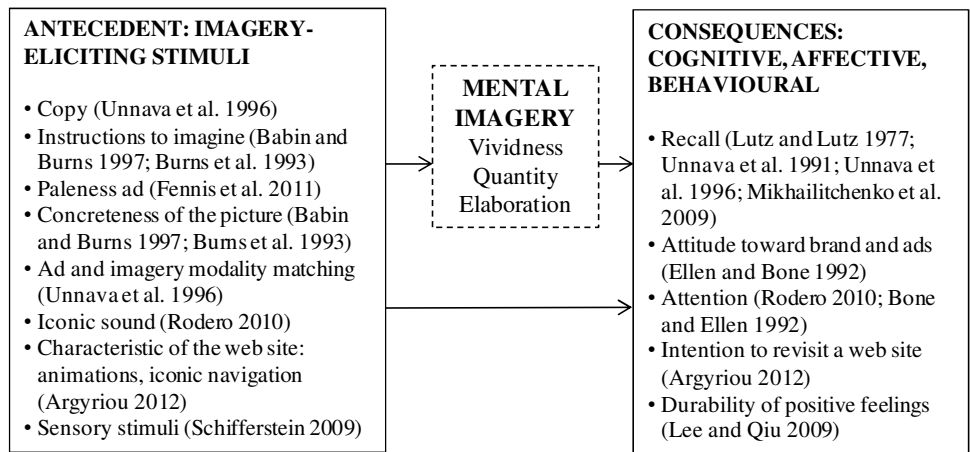
26 Dual coding theory (DCT) as well as Keiras’s (1978) propositional-representations theory
27 (PRT) are used to explain the nature of this mental representation that is triggered by a stimulus,
28 and the manner in which it is processed. Regardless of the differences in terms of cognitive
29 processing, which is not addressed in this study, both theories lead to similar results: that is,
30 mental representations of the world around us. In fact, there seems to be no reason to think that
31 it is incoherent to combine them (Rodero 2010).

32 Four types of mental imagery have been identified: *after imagery*, *eidetic imagery*, *imagination*
33 *imagery* and *thought imagery*. The main focus of marketing research has been on *thought*
34 *imagery*, because it is generated in consumers as a consequence of advertising stimuli (Burns,
35 Biswas and Babin 1993). *Thought imagery* is spontaneously aroused due to the adaptive

1 demands of the external world or after instructions has been given to form an image of
 2 something from an external source as advertising (Richardson, 1983).

3 Since MacInnis and Price (1987), conceptual framework for mental imagery has differentiated
 4 three constructs: imagery-eliciting stimuli, imagery construct that mediates the effect of
 5 different tactics used in advertising, and the consequences of induced visualization (Figure 2).

6 **Figure 2.** Antecedents and consequences of mental imagery in advertising



7
 8 **2.1. Type of Mobile Message (SMS vs. Visual Ad)**

9 Despite the fact that mental imagery is believed to occur even in the absence of external
 10 stimulation, different mechanisms have been identified that elicit imagery. Studies have shown
 11 that pictures are more easily recalled or recognized than words (Lutz and Lutz 1978). Dual code
 12 theory is the dominant explanation for the stronger and superior ability of pictures over words to
 13 evoke the use of mental imagery (Bucci 1985; Paivio 1986). Pictures are encoded as imaginal
 14 codes in memory and words are represented as verbal codes. However pictures are labeled more
 15 spontaneously than words are imagined, creating a dual code, verbal and imaginal for pictures.
 16 Thus, the superior effect of pictures on mental imagery (superior memorability and greater
 17 imagery-eliciting response) is assumed to be a consequence of the ease of formation of dual
 18 codes for pictures versus words (Unnava and Burnkrant 1991).

19 Exploring further the relationship between stimuli and imagery-elicitation, Babin and Burns
 20 (1997) showed that the type of picture could be responsible for the vividness of mental imagery.
 21 Concrete pictures stimulate more vivid mental imagery than abstract pictures, but the quantity
 22 and the elaboration of that mental imagery was not affected (Babin and Burns 1997).
 23 Nevertheless, these authors made a comparison between clear and focused pictures vs. unclear
 24 and unfocused ones, not between the content of images. Babin and Burns (1997) concluded that
 25 concrete pictures may not be effective in stimulating a large quantity of imagery because
 26 everything is provided in the stimulus (Rossiter and Percy 1983).

1 Despite the assumed superiority of pictures evoking vivid mental imagery in advertising, words
2 can stimulate the generation of mental imagery as well (Paivio et al. 1968). A high imagery
3 copy could have a greater recall effect; in this case, the addition of pictures did not increase
4 subjects' ability to recall (Unnava and Burnkrant 1991). Therefore we propose the following
5 hypothesis:

6 **H1.** Visual mobile ads will have a greater impact in eliciting vivid mental imagery
7 than SMS mobile ads.

8 **H2.** SMS mobile ads will have a greater impact in eliciting a larger quantity of mental
9 imagery than visual mobile ads.

10 2.2. *Message Orientation (Information vs. Transformational Ad)*

11 The facility to create vivid mental imagery is related to different factors, such as familiarity
12 with, or the knowledge of, the object to be imagined. A greater familiarity with and knowledge
13 of, the object increases the degree of imagery experienced (MacInnis and Price 1987). In this
14 regard, one of the most important aspects to enhance mental imagery is to provide a stimulus
15 that is able to substitute reality, bringing a similar experience: you do not need to touch it,
16 because you are able to “experience” what you will feel when you touch it.

17 Mental imagery can be a sensory analog, then under high imagery conditions, imagery
18 substitutes reality and performs a surrogate or vicarious experience (Li, Daugherty and Biocca
19 2003). Elaborate imagery is likely to be most valuable and prevalent when the consumer is not
20 able to have real contact with the product. This is the advertising context. For this reason,
21 emotional reactions to imagined scenarios are highest when elaborate imagery processing is
22 used. In particular, the strongest effects observed take place when subjects imagine themselves
23 as the main characters in the scene (MacInnis and Price 1987). Thus, when the ad focuses on the
24 experience of using the product, making it richer, warmer, more exciting, and/or more
25 enjoyable, instead of providing solely an objective description of the product advertised, it
26 provokes a vicarious experience in consumers.

27 Considering the two main content strategies in advertising: transformational and informational
28 (Puto and Wells 1984; Aaker and Stayman 1992), we anticipate a difference of imagery eliciting
29 processes. Transformational ads –focused on the experience of using the product– will be more
30 efficient than informational ads –focused on product attributes– in creating vivid and elaborate
31 mental imagery, due to the fact that subjects perceive themselves as the main characters of the
32 ad when transformational orientation is used. Therefore we propose the following hypothesis:

33 **H3.** Transformational mobile ads will exert a greater impact in eliciting more vivid
34 mental imagery than informational mobile ads.

1 **H4.** Transformational mobile ads will exert a greater impact in eliciting more
2 elaborate mental imagery than informational mobile ads.

3 During the previous consumption stage, mental imagery elicited by ads stimulates a sort of
4 simulation or anticipatory consumption. The customer imagines what the consumption
5 experience would be like, and what it would feel like. Then, the more vivid the mental imagery
6 is, the more real the experience will be. In an analogous context in clinical psychology, it has
7 been shown that affective reactions can be turned into behavior (Bandura 1982).

8 Because purchase intentions are people's predictions about their own behavior, people likely
9 base these predictions on their ability to envisage themselves consuming the product. Indeed,
10 there is some evidence that imagination can influence intentions (Gregory, Cialdini, and
11 Carpenter 1982). Thus, the extent to which users can clearly and easily see themselves using a
12 product should affect their expectations to purchase it (Schlosser 2003). In fact, the ability of
13 transformational ads to create more vivid and elaborate images mitigates the moderating effect
14 exerted by the subject's ability to perform mental imagery (Fennis et al. 2011).

15 The easier and more vividly individuals can envisage a scenario, the higher the likelihood that
16 such scenario will occur (Kahneman and Tversky 1982; Bone and Ellen 1992). Moreover,
17 because vivid mental imagery resembles the actual experience more closely than cognitive
18 elaboration, it has been suggested that it is superior in influencing intentions (MacInnis and
19 Price 1987). To summarize, the extent to which users can clearly and easily see themselves
20 using a product should affect their intentions to purchase it. Therefore we propose the following
21 hypothesis:

22 **H5.** The higher imagery exerted by a mobile ad is, the greater the impact on purchase
23 intentions.

24 *2.3. Mobile Advertising Trust*

25 In the context of mobile advertising, trust plays a crucial role in obtaining desired consumer
26 responses. The communication model of mobile media is diverse, but it always requires an
27 action from the user. From SMSs, the most common platform for mobile advertising, to always-
28 on services, with interactive and location-based applications where a “one-to-one dialogue” with
29 the user is possible (Kavassalis et al. 2003), all these strategies require a previous action. To
30 ensure that the advertising fulfills its role, consumers should be able to trust the message they
31 receive (Li and Miniard 2006).

32 Trust is a complex and multidimensional construct that deals with reliability, usefulness, affect
33 and the willingness to rely on it (Soh et al. 2007). Considerable marketing research views trust
34 as an established antecedent of persuasion that has long been studied in attitude theory. In the
35 communication domain, the role of trust has been identified as an important mediator in

1 advertising effects: attitude, interest, campaign's recall (Okazaki, et al. 2007). Thoughts
2 experienced during processing the ad, the degree of positive emotions and the behavioral
3 intention to rely on it explain the level of trust in advertising (Li and Miniard 2006). Further,
4 behavioral intentions are implicit in the conceptualization of trust (Moorman, Zaltman and
5 Deshpandé 1992). When consumers make decisions or take action on the basis of uncertain
6 information, trust becomes crucial.

7 The challenge for the advertising strategist is to generate effects in the consumer by the use of
8 different stimuli: words and images, to picture a clear, accurate, elaborate and desirable idea of
9 the product advertised in order to encourage message trustworthiness.

10 In the technological environment, where trust cues, usually obtained from face-to-face
11 interactions, are rather limited, the importance of trust becomes evident (Gefen, Karahanna and
12 Straub 2003). Studies of e-commerce have shown that the intention to purchase online involved
13 trust in the e-vendor. Cell phone users' share some characteristics with the adoption of e-
14 commerce. Both are operationalized through a special medium, where inputs emerge in a virtual
15 environment, though there is a lack of physical trust cues.

16 As Kumar (1996) stated, easy-to-understand concepts and processes are a recipe for creating
17 trust. Then, the mental imagery elicited as a consequence of a suitable design of the message
18 that provide efficient cues would likely have a positive effect on ad trust, perceived risk will be
19 reduced leading to behavioral intentions (Deng et al., 2010). Therefore we posit mental imagery
20 to be a latent construct operating as an explanatory variable between the advertising strategy and
21 ad trust. The role of mental imagery is to ease uncertainty or transform it into certainty once the
22 message has been visualized.

23 **H6.** Imagery exerted by mobile ads mediates the significant relationship between
24 advertising strategies and ad trust.

25 **3. Experimental methodology**

26 *3.1. Method*

27 A 2 x 2 factorial analysis between subjects experimental design was carried out. We selected the
28 following independent variables: (1) SMS message versus visual ad, and (2) transformational
29 versus informational ad. For the dependent variable we used (1) mental imagery, (2) purchase
30 intention, and (3) advertising trust.

31 This experiment would provide a test of the six hypotheses stated regarding the effect of the
32 type of message (hypothesis 1, hypothesis 2) and the content orientation (hypothesis 3,
33 hypothesis 4) on eliciting mental imagery and the role of mental imagery as a mediator variable
34 in the effect on purchase intention (hypothesis 5) and trust (hypothesis 6).

1 3.2. *Participants and Design*

2 A sample of 169 undergraduate students from a large Spanish university participated in the
3 study. This specific consumer segments are using mobile phones increasingly
4 as single-source communication devices (Sultan et al.,2009). Also, Shankar and Sridhar (2009)
5 identify the millennials, a broader segment that includes university students, a relevant target of
6 mobile users due to their technical prowess.

7 The mean age of participants was 22 years old, with a standard deviation of 2 years (43% male
8 and 57% female). Subjects agreed voluntarily to participate and the experimenter randomly
9 assigned them to one of the four experimental ad conditions. Cell sizes ranged from 39 to 47
10 participants.

11 Two independent variables were manipulated in the factorial design. The first factor represented
12 the type of ads (SMS vs. image). The ad manipulation involved presenting the same copy in two
13 formats: an SMS message of plain text relating to the main product characteristics, or an image
14 message with a picture accompanied by the same text message. The second independent
15 variable was content strategy (informational vs. transformational). The ad manipulation
16 involved presenting a copy referring to product characteristics and a picture of the product for
17 the informational version, while in the transformational version the ad consisted of a copy that
18 referred to the experience of wearing the product and a picture of young consumers enjoying
19 themselves while wearing it. There were therefore four ads (Image 1).

20 3.3. *Procedure*

21 The study was conducted in several sessions with between fifteen and twenty subjects in each
22 session. Only one factor was manipulated within any one session. Subjects were invited to
23 participate in a study of mobile marketing. The instructions given prior to the experiment were
24 concise in order to avoid conditioning the participants in terms of their attention: they were
25 instructed just to look at the ad for as long as they wanted and to answer a simple questionnaire.
26 Each participant received only one type of mobile ad. They were subsequently asked to answer
27 a questionnaire containing the dependent measures. After they completed the questionnaire, we
28 asked them about the possible purpose of the study. Nobody guessed it. Finally they were
29 thanked for their participation.

30 3.4. *Stimulus Design*

31 The choice of product was conditioned by the following factors. First, participants should
32 belong to the target group; second, they should be able to visualize and to form behavioral
33 attitudes based on the ad.

34 We conducted four types of pre-test to assess stimuli manipulation. First, to enhance the

1 likelihood that the sample would process the target ad, we administered a brief pre-test with a
2 sample of 34 undergraduate students, in which we asked them about their interest in different
3 product categories. Participants rated their level of interest in, and their degree of familiarity
4 with: fashion and accessories, cosmetics, food and beverages, mobile devices, computers.
5 Clothes were rated very highly in both dimensions ($M_{\text{Fashion}} = 5.6$ for level of interest, $M_{\text{Fashion}} =$
6 6.2 for familiarity on a seven-point Likert scale where 1 = lowest and 7 = highest).
7 To arrive at a satisfactory manipulation of ad content and to minimize the effect of prior
8 experience, knowledge or brand familiarity, we created a fictitious brand: D plus (referred to in
9 the text version as d+). We designed four final art-works to satisfy the two criteria of stimuli.
10 Input messages were based on real ads and designed by a creative advertising executive.
11 To assess the appropriateness of each ad in content, copy or images, we conducted a second pre-
12 test with a total sample of 48 undergraduate students, divided into 4 groups. All the ads were
13 rated on the following aspects, on a seven-point Likert scale (1 = lowest and 7 = highest):
14 appropriateness ($M = 4.8$), credibility ($M = 4.3$), comprehensibility ($M = 6.3$), unusualness (M
15 $= 2.3$) and there were no significant differences among them.
16 We then conducted a new pre-test in the form of a matching task to assess the adequacy of
17 pictures and copy in each ad with a sample of 22 subjects. Participants received paper cards
18 with separate copy and images. They were asked to match each copy card with the picture that
19 better fitted the text. The subjects' accuracy in performing the task was 89%.
20 Finally, we conducted a pre-test to gauge the suitable manipulation of strategy content. A sample
21 of 40 subjects rated each ad on seven-point Likert scale (1 = lowest and 7 = highest) assessing
22 the extent to which the ad referred to the product characteristics or the experience of using it.
23 Participants exposed to the experiential ad of d+ (fashion products) rated the ad higher in
24 experiential content ($M_{\text{Experience}} = 4.8$, $M_{\text{Product characteristics}} = 3.4$), while the subgroup exposed to the
25 informational content rated the ad higher in information about product attributes ($M_{\text{Experience}} =$
26 2.6 , $M_{\text{Product characteristics}} = 5.5$) over experience.

27 *3.5. Measurement of Dependent and Mediator Variables*

28 These are the key variables we considered for our model:

- 29 (1) Mental imagery: we used Babin and Burns (1998) scale to measure imagery processing. All
30 fourteen items were rated on a seven-point Likert scale (ranging from 1 = strongly disagree to 7
31 = strongly agree). Eight items measured vividness, three items measured quantity and
32 elaboration respectively.
- 33 (2) Advertising trust: the ADTRUST scale developed by Soh et al. (2007) was chosen to
34 measure advertising trust. The scale has twenty items to be rated on a seven-point Likert scale
35 (1 = strongly disagree to 7 = strongly agree), grouped in four factors: reliability, usefulness,

1 affect and willingness to rely on it.
2 (3) Purchase intentions: to measure purchase intention we used an eleven-point item scale based
3 on Bone and Ellen (1992) to estimate the probability that subjects would consider in the future
4 buying the product advertised. Scale responses ranged from virtually certain (100%) to no
5 chance (0%).
6 We also included age and gender as control variables.

7 **4. Results**

8 The 14 items of the imagery processing scale and the 18 items of the ADTRUST scale were
9 subjected to principal component analysis (PCA). The suitability of data for factor analysis was
10 assessed. The KMO value was .91, exceeding the recommended value of .6, and Bartlett's Test
11 of Sphericity reached statistical significance, supporting the factorability of the correlation
12 matrix. The number of extracted factors with eigenvalues equal to or greater than 1 was seven
13 (three dimensions of IMAGERY and four for ADTRUST). All items were assessed on the
14 appropriate factor and factor loadings were higher than .5.

15 A seven-factor confirmatory factor analysis (CFA) was performed to assess the psychometric
16 properties, discriminant validity, and convergent validity of all measures. Despite the fact that
17 the chi-square value of 768.357 ($df = 356$) was significant, the measurement model achieved an
18 acceptable level of fit as indicated by a comparative fit index (CFI) of .946 and a root mean
19 squared residual (RMSR) of .058. Discriminant validity was assessed if variance extracted was
20 greater than .50 and greater than the square of the correlation between constructs (Fornell and
21 Larker 1981). Variance extracted estimates ranged from .69 to .72, and they were all greater
22 than the square of the correlations between their respective constructs. Reliability was measured
23 with Cronbach's alpha, and exceeded the generally accepted minimum level of .60 (Nunnally
24 1978). For imagery scales $\alpha = .855$, and for ADTRUST scale was $\alpha = .916$, suggesting that
25 there was high internal consistency. With all exploratory diagnostics exceeding suggested
26 thresholds, the scales were summed and averaged separately (M_IMAGERY and M_TRUST)
27 to form an index of imagery and ad trust to be used in further analysis.

28 *4.1. Manipulation Checks*

29 Results showed that type of message manipulation –SMS message vs. visual ad– exerted a
30 significant difference in imagery processing. Participants rated greater imagery for visual ad
31 compared with those exposed to the SMS message ($F(1,171) = 6,764, p < .05$).

32 The mean difference was also significant for content manipulation i.e., transformational vs.
33 informational ad. Participants exposed to the mobile product ad rated greater imagery for
34 transformational ad compared with those exposed to the informational message ($F(1,171) =$

1 37.325, $p < .000$). As this manipulation check indicated differences between the type of
 2 message and its contented orientation, we conducted the following analysis.
 3 Using a two-way ANOVA we tested the hypothesized effects of imagery dimensions.

4 *4.2. Hypotheses Test*

5 Hypothesis 1 stated that visual mobile ads would have a greater impact in eliciting vivid mental
 6 imagery than SMS mobile ads, and hypothesis 2 predicted a greater impact of SMS in eliciting a
 7 greater quantity of elaborate mental imagery than visual mobile ads. These hypotheses were
 8 tested by running a MANOVA (Table 1) with summed and averaged index scales for the three
 9 imagery dimensions (Babin et al. 1993) and it showed a significant effect of for the type of
 10 messages (Wilks lambda = .799, $F = 13.996$, $p < .000$). The ANOVA results indicated that
 11 visual mobile ads boosted the imagery process, increasing vividness and elaboration in a
 12 significant way; however, and despite the fact that it is also significant, the difference in
 13 quantity suggests that SMSs are better at boosting a great number of mental images (Table 2).
 14 Hence hypothesis 1 and hypothesis 2 were supported.

15 Regarding hypothesis 3 and hypothesis 4, in connection with the positive effect of experiential
 16 content orientation in vividness and elaboration, the results of MANOVA (Table 1) indicated a
 17 significant effect of content orientation (Wilks lambda = .795, $F = 14.354$, $p < .000$). The
 18 ANOVA results indicated that transformational mobile ads boosted imagery process, increasing
 19 both vividness and elaboration (Table 2) in a significant way ($F_{Vividness}(1,169) = 32.172$, $p <$
 20 $.000$; $F_{Elaboration}(1,169) = 20.531$, $p < .000$). Hence hypothesis 3 and hypothesis 4 were
 21 supported.

22 **Table 1**

23 Effects of type of mobile ad and type of content on vividness, quantity and elaboration

Source Main Effects	MANOVA			ANOVA F-Values				
	Wilks	F- Value	df	Vividness	df	Quantity	df	Elaboration
Product (d+ fashion wear)								
Type of mobile ad (TM)	.799	13.996 ^a	1	26.873	1	9.177	1	16.076
Type of Content (TC)	.795	14.354 ^a	1	32.172	1	5.216	1	20.531
Interaction	.988	.263	1	.009	1	.745	1	.034
Residual			169		169		169	

24 ^a $p < .01$
 25 ^b $p < .05$
 26
 27

1 **Table 2**

2 Means for effects of type of mobile ad and type of content on vividness, quantity and
 3 elaboration

Product (d+ fashion wear)	TREATMENTS			
	Type of Mobile Ad		Type of Content	
	SMS	MMS	Informational	Transformational
Vividness	3.356	4.218	3.315	4.258
Quantity	4.341	3.706	3.784	4.262
Elaboration	2.976	3.812	2.921	3.866

4

5 Interaction between types of message and content orientation was non-significant in all imagery
 6 dimensions.

7 Next, a regression model with purchase intention as the dependent variable and imagery
 8 dimensions (vividness, quantity and elaboration) as independent variables, showed a positive
 9 and significant effect of vividness ($\beta = .390, p < .000$) and elaboration ($\beta = .270, p < .01$) as
 10 predictors of purchase intentions, while quantity remained to be not significant in this model.

11 The regression model had a moderate explanatory power ($R^2 = .23, F = 16.692, p < .000$).
 12 Hence hypothesis 5 was partially supported.

13 Finally, hypothesis 6 proposed that imagery would mediate the effect of imagery eliciting
 14 strategies on ad trust (ADTRUST). In order to test this hypothesis, we first examined the effect
 15 of imagery variables on ad trust (ADTRUST) by running a multiple regression model with
 16 vividness, quantity and elaboration as independent variables. Results indicated that vividness
 17 and elaboration explained a significant proportion of variance. Beta weights in Table 3 indicated
 18 a significant and positive relationship between vividness and elaboration dimension of imagery
 19 on trust, but quantity seemed to be a non-significant predictor of trust.

20 **Table 3**

21 Effect of dimensions of imagery on Ad Trust

Dependent Variable	Independent variable	Standardized Estimate	p-Value	R ²	F	p-Value
Product (d+ fashion wear) Ad_Trust	Vividness	.337	.000	.37	32.779	.000
	Quantity	.086	.161			
	Elaboration	.354	.000			

22

23 Then an ANOVA was run to test the effect of the type of ad and orientation content on ad trust.
 24 Results suggested a significant effect of the type of ad ($F (1,169) = 12.709, p < .000$), and
 25 orientation content ($F (1,169) = 9.434, p < .01$) on ad trust.

26 Next a MANCOVA was run with vividness and elaboration as the covariate, and content
 27 orientation as treatment and ADTRUST as the criterion variable. Quantity was not used as a
 28 covariate because it did not explain ad trust variance. Results (Table 4) indicated that the
 29 introduction of vividness and elaboration as a covariate resulted in an insignificant effect of the
 30 type of ad and content orientation on ad trust, while vividness and elaboration had a significant

1 effect on ad trust. Hence, hypothesis 6 was supported in the sense that imagery vividness and
2 elaboration mediated the effect of the type of message and orientation content on advertising
3 trust.

4 **Table 4**

5 Mediating effects of vividness and elaboration on Ad Trust

ANOVA <i>F</i> -Values		
Source	<i>df</i>	<i>F</i>
Product (d+ fashion wear)		
Type of Mobile Ad (TM)	1	.456
Type of Content (TC)	1	.041
Interaction	1	2.317
Vividness	1	18.429
Ease	1	23.799
Residual	167	

6
7 **5. Discussion**

8 Mental imagery and trust have been extensively studied in traditional media due to their
9 importance in advertising success, while mobile marketing remains largely an unexplored field
10 of research.

11 The present study addressed the issue of imagery processing of mobile ads. It examined two
12 imagery-eliciting strategies: type of message (SMS vs. image) and content orientation
13 (informational vs. transformational), and documented their effects on advertising trust and
14 purchase intention. Our study focuses on the analysis of imagery in its three dimensions.

15 This paper fits into a stream of research aimed at furthering our understanding of mental
16 imagery elicited by advertising. Specifically, the study verifies that consumer purchase
17 intentions and trust can be explained by the different dimensions of mental imagery elicited by
18 mobile advertising. Results show that the mental imagery-eliciting effect from SMS ads differs
19 when compared to visual ads. Additionally, informational versus transformational content has a
20 different effect on mental imagery. We also found evidence of the importance of the mental
21 imagery eliciting process as an antecedent of purchase intention and as a mediator of advertising
22 trust.

23 Despite imagery-eliciting strategies having been studied in the past, our research contributes to
24 knowledge in several ways. From a theoretical perspective, the findings of the study in the
25 mobile media context are consistent with prior research in the domain of print advertising,
26 showing the power of pictures and copy on mental imagery (Unnava and Burnkrant 1991; Babin
27 and Burns 1997). According to the dual code theory (Bucci 1985, Paivio 1986), pictures have a
28 superior ability to evoke mental imagery, since they are encoded as imaginal and labeled
29 verbally. Results reproduce this effect showing a superiority of the visual ad to generate vivid
30 and elaborate mental imagery.

1 We have also found evidence of the limited capacity of pictures to boost quantity imagery.
2 Word messages –SMS– are more effective in stimulating a large quantity of imagery than visual
3 ones. This finding is also consistent with Rossiter and Percy (1983). An explanation for the
4 above may be that a vivid, highly concrete visual image does not convey a high amount of
5 quantity imagery, as viewers become passive, with no opportunity to imagine anything else but
6 the content of the image provided; however, in the absence of an image, viewers assume an
7 active role, which leads to the formation of images as a natural part of understanding the
8 meaning of the statement (Unnava et al. 1996).

9 The quantity of mental imagery elicited by ads seems to have no effect either on purchase
10 intention or on advertising trust. Therefore we should consider to what extent it is interesting to
11 focus on strategies to boost quantity dimension of mental imagery when designing a mobile ad
12 campaign. Certainly more work needs to be done before we have a complete understanding of
13 the role of the quantity dimension on mobile ads, and whether it has any effect on how much
14 people like the ad, or on how enjoyable the ad is.

15 This study also demonstrates the strength of transformational contents to elicit vivid and
16 elaborate imagery. Transformational content facilitates subject recall of their past experience
17 and the overlay of their own feelings and fantasies onto the scene. In other words, subjects may
18 perceive themselves as the main characters of this scene (MacInnis and Price 1987). Therefore
19 imagery gains in vividness and becomes more elaborate, leading subjects to a vicarious
20 consumption experience. Moreover, the interaction between visual ad and transformational
21 content suggests a greater effect, due to the addition of an empathy effect with those seen in the
22 ads.

23 Further, this study explores the effect of mental imagery on mobile ads in consumers' behavior
24 which has not been discussed to date. Specifically, its effect on purchase intention and on
25 generated trust. Mental imagery is revealed as an antecedent of purchase intention. Results in
26 this regard are consistent with those of Argyriou (2012) in the web-site context.

27 Despite the importance of the trust that consumers need to place in an advertisement in order to
28 drive behavior, the likelihood that mental imagery performs a mediating role on ad trust has not
29 yet been considered. This study documents new evidence of the impact of mental imagery on
30 communication. Certain features of the message –text, pictures and content– may influence
31 thoughts experienced during the processing of the ad, increasing its ability to evoke imagery-
32 related thinking. Hence, it is important to emphasize this result, as it shows the total mediation
33 effect of mental imagery.

34 From a wider perspective, in this study imagery was mainly linked with visual and
35 transformational ads, suggesting that trustworthiness is more a question of favorable thinking
36 than objective information. This is consistent with Li and Miniard (2006). Trust emerges after
37 direct contact, but in the absence of such direct contact, vicarious experience could assume this

1 role. Therefore a future research line would be to deepen the role of imagery elicited by non-
2 informative ads and its impact on advertising trust.

3 **6. Implications, limitations and future research**

4 Mobile media raises many questions for academic and practitioners. This research contributes to
5 the study of the antecedents of behavioral intention in mobile marketing, deepening its
6 performance.

7 From a managerial point of view, the study suggests the possibility of applying our imagery
8 knowledge to this emergent media. Results lead us to recommend the use of visual ads
9 combined with transformational content to mobile advertising strategists, instead of describing
10 product characteristics in order to promote imagery. Suitable stimuli such as pictures showing
11 product experiences make it easy for subjects to anticipate what they will feel when using the
12 product/service, exerting a positive effect on advertising trust and purchase intentions. This is
13 particularly important in the mobile domain, where the message always requires an action from
14 the user.

15 Besides, it is important to provide cues that help marketing strategists and designers to develop
16 an efficient and suitable message. It seems that SMSs, the most common platform for mobile
17 advertising, do not evoke vivid imagery. This has implications on trust and behavioral
18 intentions.

19 Future research is needed to analyze the differences according to product categories. Are
20 transformational contents also efficient with functional products? More work also needs to be
21 done to understand the role of the quantity dimension on the mental imagery elicited by mobile
22 ads. Has the quantity dimension any effect on how much people like the ad, or on how
23 enjoyable it is? Other research questions regarding mental imagery in this field are the effect of
24 animated and interactive messages, specifically those that offer location-based promotions. In
25 this particular case, the effect of mental imagery could be connected to its ultimate
26 consequence: to traffic building for the retail sector.

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