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Self-endorsing in digital advertisements: Using virtual selves to persuade physical selves

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ABSTRACT

Self-endorsed advertisements (SEAs) are a novel form of digital advertisements, wherein a virtual self that looks like oneself in a digital advertisement persuades the physical self. Study 1 ($N = 63$) found that for unfamiliar brands, SEAs were more effective in promoting favorable brand attitudes using both verbal (name) and visual (picture) virtual self cues than no self-endorsing at or only a picture of the self. Self-referencing, the psychological process of encoding new information by activating one's self schema, mediated self-endorsing and brand attitude. Study 2 ($N = 75$) manipulated the agency of SEA creation (i.e., self-versus other-created). Controlling for pre-existing brand attitudes, self-created SEAs elicited greater self-referencing for existing brands than other-created SEAs. High self-referencing led to high perception of self-brand congruity, and ultimately favorable brand attitude. We discuss theoretical and practical implications of self-endorsing as a new persuasion tool in a digital media environment.

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1. Introduction

Advanced digital technology has given rise to novel means of extending the self-concept that were difficult or impossible with traditional advertisements. Earlier, Ahn and Bailenson (2011) introduced the concept of *self-endorsed advertisements* (SEAs), featuring the virtual self as an endorser of a brand in an advertisement. In a digital world, a virtual self—a virtual representation (i.e., any form of representation that marks a user's entity in a virtual space; Ahn, Fox, & Bailenson, 2011)—that looks like oneself may be constructed and controlled by a third-party, resulting in a virtual self that looks like oneself but may not behave like oneself (Ahn, 2015; Ahn et al., 2011). Imagine a situation in which you are browsing the Internet, and in a banner advertisement for a soft drink, you see your virtual self eagerly sipping the soft drink, looking directly at you. You know for a fact that you have never starred in an advertisement but the model has all of your distinct features, including your physique and mannerisms. As such, self-endorsing allows for novel marketing/advertising scenarios in which the virtual self actively persuades the physical self to

purchase goods or services (Ahn & Bailenson, 2011, 2014).

As technological advances in media platforms afford such novel approaches to persuasion, consumer attitudes and behaviors are likely to be impacted in unprecedented ways. In particular, the ability to digitally create virtual selves that may be incorporated into messages with or without the physical self's awareness shifts the boundary of what has traditionally been understood as the relationship between endorsers and audiences in persuasive messages. Investigating the effect of SEAs on consumers is especially timely and relevant in the context of *social networking sites* and the wide availability of virtual self cues, such as pictures, profiles, and personal preferences that are being used in commercial messages without explicit notification to users.

The current study reports two studies conducted to extend earlier findings on SEAs by confirming the most optimal means of using self cues in SEAs to elicit favorable brand preferences. Study 1 served as a pilot study to test optimal design strategies for SEAs to maximize favorable brand evaluation effects. In this study, we compared verbal, visual, and a combination of both in delivering self cues in SEAs and their effects on brand preferences. These results were followed up with Study 2 to test the boundary condition of self-endorsing effects. In this study, the influence of agency in self-endorsing effects on brand

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preferences was tested by comparing SEAs created by the self against those created by a third party. The two studies delved deeper into the underlying mechanisms of self-endorsing and tested SEAs in a realistic setting by embedding them in a naturalistic news website, in contrast to earlier studies which bolstered experimental control but potentially exaggerated observed effects by testing experimental stimuli independent of context. Finally, we also present an in-depth, critical discussion of the ethical issues of SEAs and hyper-personalization strategies in persuasive communication.

2. Literature review

2.1. The self-endorsed advertisement

The concept of associating the self to a brand or a product is not new; Belk (1988) argued that consumers regard their possessions as extensions of the self. With the rapid development of advanced digital technology, consumers may now easily create and replicate virtual selves. The constraints of physical bodies no longer bind individuals, shifting our understanding of the self and its extensions (Ahn et al., 2011). Accordingly, the idea of the extended self has been revised in this digital context (Belk, 2013), recognizing that our physical selves may be extended into the virtual world as photos, videos, or avatars.

Ahn and Bailenson (2011) provided initial evidence on the potential of applying virtual selves in the context of advertising in two- and three-dimensional virtual environments, wherein the virtual self in the form of a static digital photograph or an interactive avatar was used to endorse a brand or product to the physical self. In this study, participants were shown a digital advertisement for an unfamiliar soft drink brand featuring either their virtual selves (self-endorsing) or unfamiliar virtual others (other-endorsing). Results confirmed that self-endorsing led to more favorable brand attitude and higher purchase intent than a brand endorsed by an unfamiliar other.

As social networking sites become more ubiquitous and more personal information becomes publicly available (Acquisti, Brandimarte, & Loewenstein, 2015), more elements of the virtual self will be at the disposal of advertisers. Despite the rapid shift in how persuasive messages may be constructed in the digital era, little research has explored the phenomenon of using consumers' virtual selves to promote a brand to the consumers' physical selves since Ahn and Bailenson's (2011) original study.

In contrast, experience has taught advertisers and marketers of recent that incorporating elements of the virtual self within digital advertising messages can elicit favorable responses. For example, LinkedIn's "Picture Yourself" campaign included users' names and pictures in digital advertisements that targeted them without advance notification to the users. Google is also incorporating users' names and pictures in their advertisements without user consent (Brustein, 2013). Snapchat has recently introduced advertising "stickers" that allow users to place brand-sponsored stickers on the pictures they upload. Another popularity-gaining Snapchat feature is the 'sponsored lens,' which charges advertisers a fee—of up to \$75,000 a day for peak holidays—to provide users with the option to imprint pictures of themselves (i.e., selfies) with brand logos and images (Wagner, 2015). Thus, both third parties and consumers themselves are creating advertising messages that fuse various elements of the virtual self with brand information—SEAs. Without systematically exploring the underlying mechanisms that drive self-endorsing effects as well as examining boundary conditions, our understanding of SEAs and their effects on consumer decisions are bound to remain anecdotal and shallow.

2.2. Defining self-endorsing

The increasing availability of personal information in the digital media environment has not gone unnoticed among researchers, with a number of studies focusing on the effect of messages with information tailored to individuals (e.g., Acquisti et al., 2015; Montgomery & Smith, 2009; Tucker, 2014). Scholars have recognized that traditional segmenting practices, which develop messages that target a segmented group, may not be sufficient to elicit perceived personal relevance. A growing collection of literature supports tailoring persuasive messages at the individual level (Bailey, Baines, Wilson, & Clark, 2009; Krueter, Strecher, & Glassman, 1999; Lee, Kim, & Sundar, 2015; Skinner, Strecher, & Hospers, 1994). In particular, advances in computer technology offer the potential for computer-based tailoring. The processing power of computers increases the feasibility of tailoring even for larger-scale message strategies, as a cost- and labor-effective means of delivering individually tailored messages to a large number of audiences (Dijkstra, 2005).

One popular form of computer-based tailoring involves personalization, which is a persuasive strategy that reflects personal information collected over time, such as prior purchasing or browsing behaviors, in a message (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015; Montgomery & Smith, 2009). For instance, imagine that you were browsing the Internet for information about luxury cars and the following week, start receiving advertisements that suggest several brands of luxury cars to you (e.g., "Dear [name of customer], imagine yourself driving a new BMW 3 series!"), this would be an example of personalized advertisement. Other forms of computer-tailoring include feedback, which provides users with information about him- or herself that the individual may or may not have been aware of Kluger & DeNisi (1996).

Self-endorsing may be defined as a special form of personalization among computer-tailored messages, which involves the explicit incorporation of distinctly recognizable aspects of the virtual self (i.e., a cue which represents the self in the virtual space, such as names, profile pictures of the self, or an avatar) (Ahn & Bailenson, 2011, 2014). Therefore, personalization in digital messages that involves *implicit* incorporations of self cues—for instance, in the form of prior purchasing or browsing behaviors—would not be considered self-endorsing. Earlier studies that investigated self-endorsing have found that the explicit incorporation of virtual self cues as simple as an individual's name in a message promotes significant changes in behavior and attitude. For example, a computer-tailored health message that addressed individuals by name and encouraged them to quit smoking led to twice as many cessation attempts as messages that did not incorporate names (Dijkstra, 2005). Another study demonstrated that the mere proximity of physical distance between the position of a banner advertisement and the user's profile information on Facebook containing self cues increased preferences toward that brand and its products (Perkins & Forehand, 2012).

However, despite the wide variety of virtual self cues available that may be incorporated into SEAs with the prevalence of social networking sites, systematic studies on using self cues to persuade have focused almost solely on names (Bang & Wojdyski, 2016; Dijkstra, 2005; van Doorn & Hoekstra, 2013). In light of several social networking sites, such as LinkedIn and Snapchat, adopting SEAs that use pictures of the self as well as names, it would be meaningful to first parse out the effects of self-endorsing on brand preferences from different sources of virtual self cues, including names, pictures, or a combination of both.

2.3. Verbal versus visual self cues in self-endorsed advertisements

In the physical (offline) environment, a growing body of literature points to the favorable influence that verbal self cues in the form of names has on brand evaluations. The first systematic study of name cue influence on attitudes and behaviors revealed the *name letter effect*, which describes the implicit preference people harbor for letters of the alphabet that they use in their own names (Nuttin, 1985). Since then, a number of studies have demonstrated that the name cue leads individuals to favor brand names (Brendl, Chattopadhyay, Pelham, & Carvallo, 2005), occupations (Pelham, Mirenberg, & Jones, 2002), and even cities of residence (Jones, Pelham, Carvallo, & Mirenberg, 2004) that share the letters used in their names. Most people hold favorable evaluations of the self (Baumeister, 1998) and have a subconscious tendency to prefer things that resemble the self (Pelham et al., 2002). In this case, the self cue serves as a symbol of reward and positive feelings that motivate attitude change and behaviors (Holland, Wennekers, Bijlstra, Jongenelen, & van Knippenberg, 2009). Thus, if something as simple as a letter used in a person's name serves as a persuasion cue, eliciting favorable evaluative responses to brands, a person's full name in a SEA is also likely to elicit favorable brand attitudes.

Representing the self in the virtual world may take on various forms, ranging from names (e.g., profile names on instant messaging programs), pictures (e.g., profile pictures on websites), to a combination of both (e.g., profile names and pictures on social media) (Ahn et al., 2011) and self cues may be presented through any of these modalities. Several persuasion theories point to the superiority of visuals (pictures) over verbal (text) information in message delivery. The picture-superiority effect (Childers & Houston, 1984; Mitchell, 1979) argues that nonverbal, pictorial images enhance consumer recall and preference for products and brands. Some have proposed that the advent of advanced digital media technologies is encouraging individuals to process visual images as information rather than a mere sensory cue (Scott & Vargas, 2007). In addition, combining pictures with names may activate a dual encoding process, wherein both the path of the visual imagery process (to digest the visual information) and the path of the verbal process (to cognitively understand the verbal information) are activated (Rossiter & Percy, 1980). Paivio (1969) further argued that the dual activation of visual and verbal processing paths brings forth deeper elaboration of the message. These earlier findings suggest that having more virtual self cues by combining pictures of the self with names in a SEA would elicit more positive outcomes in terms of brand preference than less self cues.

However, the possibility of perceiving intrusiveness adds an interesting wrinkle to how consumers might consider SEAs. That is, using an individual's name and/or picture in an advertisement, unbeknownst to him or her, as in the case of *LinkedIn's* advertising campaign, may lead to feelings of intrusiveness or invasion of privacy (van Doorn & Hoekstra, 2013). When individuals realize that their picture has been taken from their social networking site profile without their consent to be incorporated into an advertisement, this knowledge may lead to negative perceptions of the brand and advertisement (Friestad & Wright, 1994) or resistance to change (White, Zahay, Thorbjornsen, & Shavitt, 2008). In contrast to the discussions above on the subconscious attraction to self cues, these findings suggest that if a SEA contains excessive self cues (e.g., combining pictures of the self with names), this might be perceived as intrusive and elicit more negative brand preference than less self cues. Therefore, a competing set of hypotheses is proposed:

H1a. Combining a picture of the self with the name in a SEA will result in more favorable brand attitudes than no self-endorsing, using the name only, or using the picture only.

H1b. Combining a picture of the self with the name in a SEA will result in more favorable brand attitudes than no self-endorsing, but less favorable brand attitudes than using the name only or picture only.

2.4. The underlying mechanism of self-endorsing: self-referencing effect

When an advertisement uses self-endorsing as its persuasion strategy, the virtual self cues incorporated into the SEA bring forth a psychological tendency for individuals to prefer and better learn new information by relating it to the self (Ahn & Bailenson, 2011). This tendency has been termed as the *self-referencing effect* (Debevec & Romeo, 1992; Rogers, Kuiper, & Kirker, 1977). Although seemingly similar, self-endorsing and self-referencing are conceptually distinct.

Self-endorsing is the active incorporation of the self and its representative elements in a persuasive message, whereas self-referencing is the underlying psychological mechanism, the process of encoding new external information in relation to self schema (Burnkrant & Unnava, 1989; Escalas, 2007). Hong and Zinkhan (1995) presented detailed descriptions of this mechanism: (1) information that is relevant to an individual (e.g., a self cue) attracts attention; (2) self-schema, highly organized and complex cognitive structures that individuals have developed throughout their lives (Greenwald & Banjai, 1989), are activated when processing the self-related information; (3) because they are so organized and developed, self-schema aid in processing and encoding the external information (Markus, 1977); (4) thus, running the new information through self-schema (i.e., self-referencing) leads to faster and easier information processing as well as better recall (Rogers et al., 1977). In sum, SEAs incorporate explicit virtual self cues in persuasive messages, elicit self-referent encoding of the message, and facilitate the processing, learning, and recall of the information presented in the message.

In the context of advertising, studies have demonstrated that self-referencing mediates the relationship between self cues and brand preference, wherein self cues were presented in the message in the form of personality (Hong & Zinkhan, 1995) or self representation in a virtual world (Ahn & Bailenson, 2011). We anticipated similar underlying mechanisms to drive the effect of self-endorsing in the current study, wherein self-referencing mediates the relationship between self-endorsing and favorable brand attitudes:

H2. Self-referencing will mediate the relationship between self-endorsing in an advertisement and the resulting favorable brand attitude.

3. Study 1: visual and verbal self cues in self-endorsed advertisements

The current study presents distinct conceptual and methodological advancements that extend the findings from Ahn and Bailenson's (2011) study on SEAs. The earlier study aimed to compare self-versus other-endorsing in either text or picture modalities. Thus, the conceptual focus was on self-other comparison in different modalities, operationalized by a picture of the self (or other) compared against the second-person pronoun "you" (or the third-person pronoun "they") in the advertisement copy. Findings established that using the self picture in a SEA elicits more favorable brand attitudes than the picture of an unfamiliar other endorser, and that the self picture has more favorable impact on brand attitudes than an advertising copy using the second-person pronoun "you." However,

the names of the participants were not tested as a potential source of self cues in SEAs, and underlying mechanisms were not pursued. Furthermore, the earlier study lacked a no treatment control group, which made it difficult to determine the baseline of brand attitudes as a reference point. Given previous findings on the influence of one's name on brand attitudes (Brendl et al., 2005), and taking the limitations of Ahn and Bailenson's (2011) study into consideration, the current study aims to conduct a deeper investigation into the role of various self cues in the context of SEAs, test self-referencing as an underlying mechanism which drives SEA effects as a result of self cues, and present a no treatment control group to determine the baseline of brand attitudes.

3.1. Design and participants

Study 1 employed a posttest-only between-subjects design comparing four conditions that manipulated the modality of virtual self cues in the SEA: no self cues (control), verbal self cue (name only), visual self cue (picture only), and a combination of verbal and visual self cues (name and picture). Sixty-three (male $n = 9$) advertising students (age $M = 21.75$, $SD = 1.66$) attending a large public university in the Southeastern United States were recruited.

3.2. Stimuli and procedure

Experimental stimuli were created using Adobe Photoshop CS5 to look exactly like digital recruitment advertisements currently used on the social networking site, *LinkedIn*. The background template of the advertisement read, "Picture Yourself with this New Job," along with a job position, and the company name and logo. The generic but relevant position of "Advertising Executive" was used. *Nanaco*, an actual European brand unfamiliar to participants in the United States, was taken from Ahn and Bailenson's (2011) study and used to control for confounding effects from pre-existing attitudes. Fig. 1 depicts sample advertisement stimuli used for each of the four conditions.

Participants took part in a photo session a few weeks before the study. They were then randomly assigned to one of four conditions. In the control condition ($n = 17$), the advertisement was displayed without any self-endorsing element with just the background template presented in the *LinkedIn* advertisement. In the name only ($n = 15$) or picture only condition ($n = 12$), either the participant's name or picture was featured. In the name and picture condition ($n = 19$), both the participant's name and picture were featured along with the same background elements. Next, each participant received an email with a digital file of the advertisement stimulus and instructions. They were instructed to examine the advertisement carefully, noting all details on the ad. After viewing the advertisement stimulus, they filled out an online survey.

3.3. Dependent measures

3.3.1. Familiarity check

A single five-point interval scale item ($1 = \text{Not at all}$; $5 = \text{Extremely}$) question asked participants how familiar they were with the brand *Nanaco* before seeing the advertisement stimulus. All participants indicated that they were either completely not familiar ($n = 60$) or only a little familiar ($n = 3$) with the brand. Further analyses demonstrated no differences between the latter three and the rest of the participants in terms of the dependent measures discussed below.

3.3.2. Brand attitude

Four five-point interval scale items ($1 = \text{Not at all}$; $5 = \text{Extremely}$) taken from Ahn and Bailenson (2011) measured brand attitude by

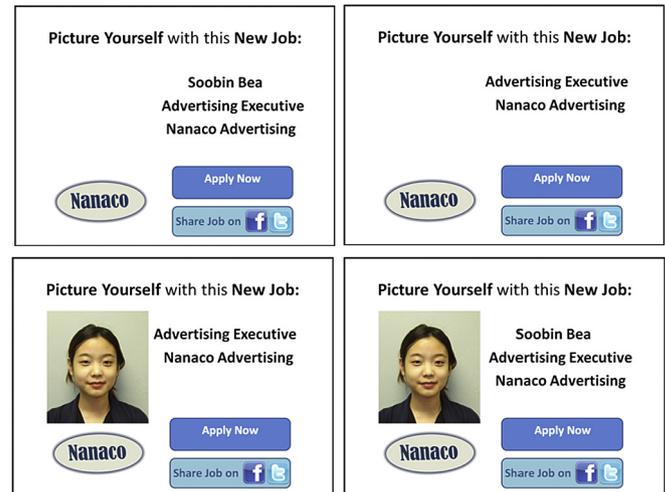


Fig. 1. Sample stimuli of three conditions in Study 1.

asking participants: "How strongly would you recommend this brand to your friend?" "How likely are you to buy a product from this brand?" "How would you describe your attitude about this brand?" and "How much did you like the brand?" (Cronbach's $\alpha = 0.88$).

3.3.3. Self-referencing

Five five-point interval scale items ($1 = \text{Not at all}$; $5 = \text{Extremely}$) taken from Debevec (1995) assessed how much the advertisement made them think about their personal working experiences; focus their thoughts on themselves; how personally relevant it is; helped them picture themselves working for the company; and telling a friend about their new jobs. (Cronbach's $\alpha = 0.88$).

3.4. Results

To test the competing set of hypotheses (H1a/H1b), an Analysis of Variance (ANOVA) was conducted with experimental conditions as the independent variable and brand attitude as the dependent variable. The main effect of experimental condition was significant, $F(3, 59) = 3.93$, $p = 0.01$, $d = 0.91$. Post hoc analysis using the Fisher's LSD (Least Significant Difference) test indicated that participants in the name and picture condition reported significantly more positive attitudes toward the brand featured in the advertisement ($M = 1.70$, $SD = 0.73$) than those in the control ($M = 1.18$, $SD = 0.29$, $p < 0.01$) and picture only ($M = 1.22$, $SD = 0.43$, $p = 0.02$) conditions. There was no significant difference between the name and picture condition and name only condition ($M = 1.55$, $SD = 0.48$, $p = 0.42$). Brand attitude in the name only condition was significantly higher than that of the control condition ($p = 0.04$) but did not differ significantly from all other conditions ($ps > 0.10$). Thus, H1b was not supported whereas H1a was partially supported.

The PROCESS path-analysis macro for SPSS (Hayes, 2012; Model 4) was used to test the mediation model for H2. To test the mediating effect of self-referencing, the variable of experimental condition was contrast coded following the guidelines proposed by West, Aiken, and Krull (1996). The self-endorsing effect of the name and picture condition (coded $-1/2$) was compared against the picture only condition (coded $1/2$) independently of the control and name only conditions (coded 0). Seeing both the name and the picture in a SEA (compared to just the picture) increased self-referencing ($b = 0.88$, $p < 0.01$), and the increased self-referencing led to more favorable brand attitude ($b = 0.22$,

$p < 0.01$). When controlling for the effect of self-referencing, experimental condition no longer had a significant linear relationship with brand attitude ($b = 0.31, p = 0.11$). The indirect effect from experimental condition to self-referencing and then to brand attitude was significant (Effect size = 0.19, 95% CI [0.05, 0.39]). Self-referencing drove the effect of self-endorsing, leading to favorable brand attitude. H2 was supported.

3.5. Discussion

Results of Study 1 suggested that self-endorsing is most effective when delivered through a combination of verbal and visual virtual self cues than only presenting a picture of the self or not presenting any self cues at all. Although mean values trended toward the predicted direction, no significant differences were found between presenting the combination of name and picture and presenting the name only. Pairwise comparisons indicated that the self-endorsing effect of using the name only in a SEA was inconclusive—the name only condition differed significantly from the control condition only. Thus, using the name only promoted more favorable brand attitude than having no self-endorsing but was not meaningfully different from any other channels of self-endorsing. Mediation analyses demonstrated the role of self-referencing in driving favorable brand attitudes: combining name and picture virtual self cues in a SEA led individuals to engage in greater self-referencing when processing the brand information, which led to favorable brand attitudes. Based on the results of descriptive and inferential statistics, we may tentatively posit that combining names along with pictures in a digital advertisement is the most effective self-endorsing strategy.

4. Study 2: the influence of agency on self-endorsing effects

Study 1 presented preliminary data on designing an effective SEA by combining both verbal and visual self cues, and confirmed the underlying mechanisms of self-endorsing. However, one limitation of Study 1 was that it tested the effects of self-endorsing with unfamiliar brand names. The literature on persuasion notes that a primary determinant of present attitude is an individual's prior evaluation of the same attitude object (Petty & Cacioppo, 1986). Advertising research also lends support to the notion that present brand attitudes are contingent upon pre-existing brand evaluations (Chattopadhyay & Basu, 1990). Thus, Study 2 extended Study 1 by incorporating well-known brands to obtain more generalizable findings. Design improvements were also made. In contrast to the first study that presented the experimental stimulus independently of any context to maximize experimental control, the SEAs in this study were embedded in a more realistic setting of a news website.

Moreover, the examples of SEAs used in *LinkedIn* and *Snapchat* discussed earlier add an interesting variable for systematic investigation: agency of control. That is, the SEA in *LinkedIn* was created by a third party unbeknownst to the user, whereas the SEA in *Snapchat* was created by the user by applying digital layers of brand information over their selfies. Responses to self-endorsing may be different when an individual is able to select the message he or she endorses and personally create the SEA, compared to when the individual finds his or her virtual self endorsing a message of which the physical self had no knowledge. Thus, the phenomenon of self-endorsing not only blurs the constraints of the physical body but also the boundary between producer and consumer of media content.

Earlier studies have demonstrated that highly personalized advertisements are more effective when participants perceive sufficient levels of control over how they release their personal information than when participants have low perceptions of

control (Tucker, 2014). Prior research on creating virtual selves suggests that individuals felt greater arousal during video game play when controlling a virtual self they selected (Lim & Reeves, 2009). Children playing advergames with a self-designed virtual self also perceived greater emotional and physiological arousal than those playing with a designated avatar created by a third party (Bailey, Wise, & Bolls, 2009). Thus, when participants are given an opportunity to incorporate their virtual self cues (i.e., names and pictures) to construct a SEA on their own, this is expected to elicit more favorable brand attitudes than being exposed to a SEA created by a third party:

H3. The SEA created by the self will lead to more favorable brand attitude than a non-SEA (H3a) and the SEA created by a third party (H3b).

4.1. Self-brand congruity as a second mediator

As tested earlier, the virtual self cues presented in SEAs are likely to attract the viewer's attention while browsing websites and elicit self-referencing effects, wherein the new information about the brand is processed with reference to the self-schema. Thus, we anticipate that H2 will be replicated and that self-referencing will mediate the relationship between the SEA and brand attitude.

However, Study 1 and the earlier Ahn and Bailenson (2011) study did not provide sufficient evidence or explanation on how self-referencing eventually leads to favorable brand attitudes. That is, while self-referencing describes how brand information may be processed faster and recalled better by using SEAs, it does not explain how facilitated processing of brand information via self-referencing leads to favorable brand attitudes. Empirical evidence on the effect of self-brand congruity may offer further explication for this missing link. Brand preferences are often driven by perception of congruencies between characteristics of the self and the brand—*self-brand congruity* (Sirgy, 1982; Sung, Choi, & Lin, 2012). Consumers imbue human characteristics to brands (Aaker, 1997), and when the brand is perceived to share the self's characteristics, the individual is likely to feel a strong attachment, preference, and association with the brand. According to the self-brand congruity hypothesis, individuals prefer the brand that is congruent with the self's own characteristics because they consider the purchase and use of brands as a means of self-expression (Escalas & Bettman, 2003). People are inherently motivated to maintain a consistent representation of the self (Festinger, 1954; Heider, 1946), and they prefer brands—an extended form of self-expression—that are highly similar or associated with the self.

As demonstrated in Study 1, if the self cues presented in a SEA trigger self-referencing effects, this leads to more favorable evaluation of the brand. In Study 2, we posited that this effect would be stronger for SEAs that are created by the self for two reasons: the element of control, and repeated exposure. When participants are given control of creating the SEA, as in the case of *Snapchat*, participants have lower perceptions of invasion or privacy violation (Tucker, 2014). Thus, the reduction in negative perceptions such as reactance or suspicion as a result of actively creating the SEAs may facilitate more self-referencing thoughts than being exposed to a SEA without playing a part in its creation and experiencing negative responses.

Furthermore, as an individual is creating a SEA, there is a higher level of exposure to the advertisement than merely being exposed to a SEA created by a third party. More frequent and longer-term exposures to both objects and people can heighten perceived familiarity (Zajonc, 2001). If the self-schema and the SEA are both perceived to be familiar, this may lead to greater facilitation of the self-referencing process than when the SEA is presented suddenly

without prior exposure.

When the brand information is processed alongside the self-schema during the process of self-referencing, we posit that this will lead to perceived similarity between the self and the brand—a congruity. As discussed, earlier studies have confirmed that this perceived congruity between the self and the brand leads to favorable brand preferences (Escalas & Bettman, 2003; Sirgy, 1982). Thus, we propose a serial mediation pathway from self-endorsing, self-referencing, and self-brand congruity, which ultimately leads to favorable brand attitudes:

H4. SEAs created by the self will lead to greater self-referencing. Self-referencing, in turn, will lead to greater perceptions of self-brand congruity, and ultimately, favorable brand attitude.

4.2. Design and participants

A three-group (control; self-create; other-create), posttest only design was used, with additional planned analyses for serial mediation pathways. The effects of two treatment conditions incorporating SEAs created by different sources—self-create and other-create—were compared against a control condition that displayed the same advertisement without self-endorsing. In each experimental condition, three brands from different product categories of varying involvement were randomly incorporated (Apple, Pepsi, Volkswagen) to obtain generalizable results across different product categories. To test whether the difference in brands influenced the results, all analyses were conducted again including brand as an independent factor, controlling for pre-existing attitudes. No main effect of different brands was significant for any of the dependent measures and this variable is not discussed further. Seventy-five participants (male $n = 13$), aged 18 to 24 ($M = 20.25$, $SD = 1.18$) were recruited from a large public university in the Southeastern United States in return for course credit.

4.3. Stimuli and procedure

Taking into consideration the mean age of participants, many of whom were preparing to secure internships, stimuli advertisements recruiting applicants for an internship position at Apple, Pepsi, or Volkswagen were created for the respective experimental conditions. For the control condition, the stimulus advertisement presented the brand's name and logo with the copy, "Picture yourself working as an intern for our company," and an "Apply Now" button. No elements of self-endorsing were included. For the self-create and other-create conditions, the stimuli advertisements presented the brand's name and logo with the same copy, but also incorporated the participant's first name and his or her profile picture. To maximize the credibility and mundane realism of the stimuli, the profile pictures were from the participants' current social media accounts.

Four mock webpages were created based on the screenshots of actual news websites, [Yahoo.com](#), [Fox.com](#), [ABC.com](#), and [HuffingtonPost.com](#) (Fig. 2).

These sites were selected for their overall recognition as one of the top ten most visited news websites in the United States (Pew Research Center, 2013). The four webpages also included a digital advertisement of comparable dimensions and similar positions on the left-hand side of the page. The stimulus SEA (or the control advertisement without self-endorsing) was embedded in only one of the four webpages, [Yahoo.com](#). The remaining three webpages were shown as fillers, with their original digital advertisements that were irrelevant to the stimulus job recruitment advertisement (e.g., jewelry, luxury car, television program).

The study was carried out in two different time phases: Time 1

(pretest: one week prior to the experimental treatment) and Time 2 (posttest: experimental treatment). At Time 1, participants first responded to an online pretest gauging their current attitudes about the three brands used in the study so that prior attitudes may be controlled for in ensuing analyses. Participants were then randomly assigned to one of three conditions. Those in the self-create condition ($n = 23$) were emailed a digital template for the stimulus advertisement. They were asked to fill in their first name in the text box and insert their current profile picture from one of their social networking site accounts, and submit the completed advertisements. The submitted advertisements were checked for quality and adjusted to maintain experimental control. In the other-create conditions ($n = 28$), participants were asked to submit their current profile picture from their social networking site accounts. The researchers created the stimulus SEAs by filling in the participant's first name and inserting the profile picture. To increase experimental control, participants in both conditions were instructed to use profile pictures that clearly present their full faces (i.e., no pet or object pictures, no pictures that fail to show the face). Participants in the control condition ($n = 24$) did not have to submit or create anything. Brands used were randomly assigned, and the completed stimulus advertisement was embedded into a news webpage as described earlier.

At Time 2, participants received an online survey with the one news webpage containing the stimulus advertisement and three filler news webpages. Only one webpage was presented at a time and the participants were instructed to pay attention to all elements of each page. The presentation order of these webpages was randomized. Following exposure to the experimental stimuli, participants responded to questions regarding their perceptions of the advertisements.

4.4. Dependent measures

4.4.1. Manipulation check

A single item 5-point Likert scale question ($1 = Strongly disagree$; $5 = Strongly agree$) asked participants the extent to which they agreed that they were in control of creating the advertisement.

4.4.2. Self-referencing

The same five items ($1 = Strongly disagree$; $5 = Strongly agree$) from Study 1 were used.

4.4.3. Self-brand congruity

Seven 5-point Likert scale items ($1 = Strongly disagree$; $5 = Strongly agree$) were taken from the self-brand congruity scale (Sirgy, Johar, Samli, & Claiborne, 1991), and asked how much: the individual identified with the brand; the brand was like them; the brand reflected who they were; the brand was exactly how they saw themselves; whether they would be the brand if they could choose to be a brand; the brand image corresponded to their self-image; and the brand expressed what they found important in life (Cronbach's $\alpha = 0.97$).

4.4.4. Brand attitude

Five 5-point Likert scale items ($1 = Strongly disagree$; $5 = Strongly agree$) taken from Sirgy et al. (1991) measured brand attitude at Time 1 (pre-existing brand attitude; Cronbach's $\alpha = 0.89$) and Time 2 (post-treatment brand attitude; Cronbach's $\alpha = 0.93$) by asking the participants the extent to which they liked the brand; thought the brand was good; had a positive impression of the brand; found the brand personable; and considered the products from the brand to be high quality.

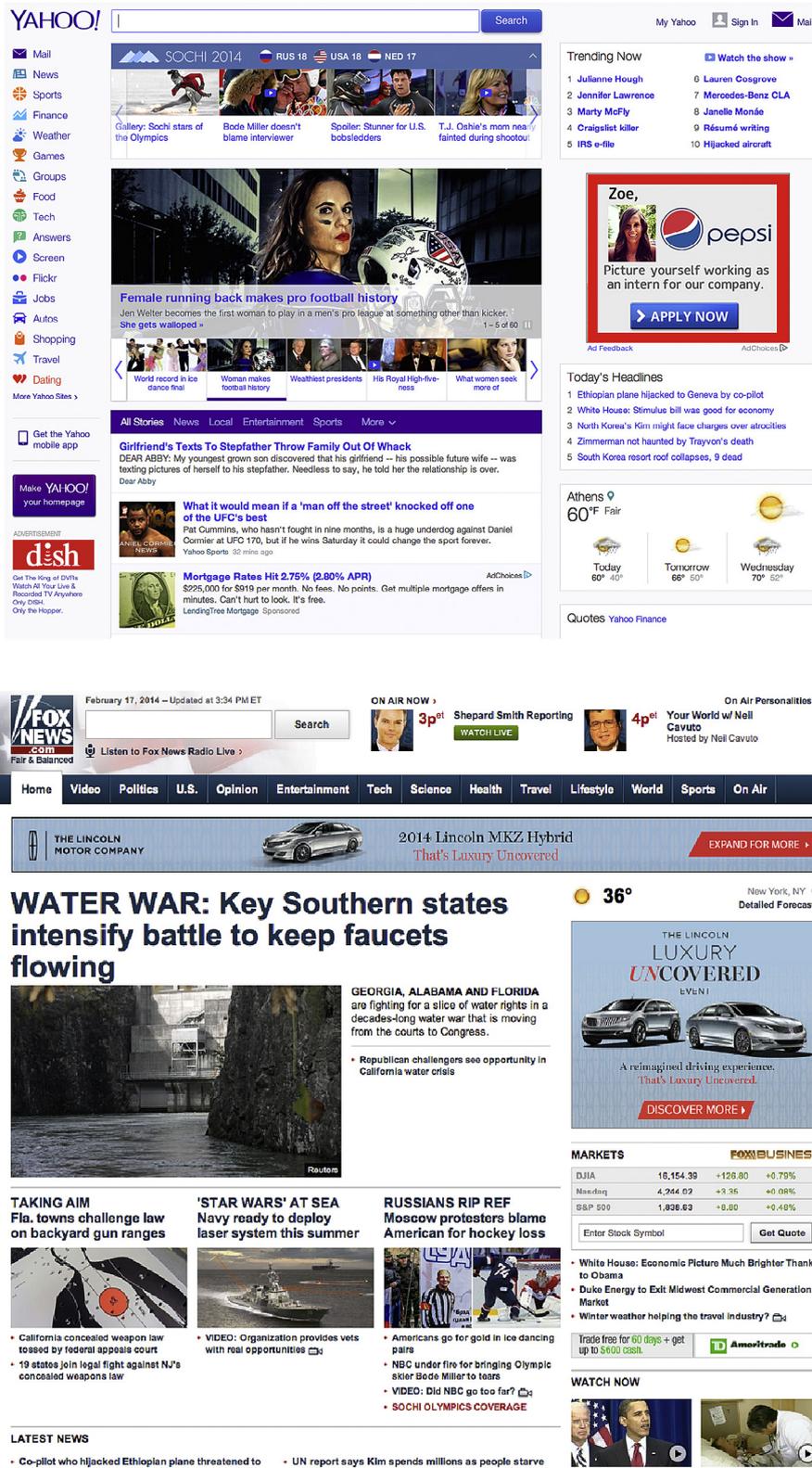


Fig. 2. Sample webpage stimuli including a self-endorsed advertisement (top) and a control advertisement (bottom) in Study 2.

4.5. Results

Table 1 presents descriptive statistics for all dependent variables. An Analysis of Covariance (ANCOVA) test was conducted to

confirm the success of manipulation. Experimental condition was entered as the independent variable, perceived control of advertising construction as the dependent variable, and existing brand attitudes assessed at Time 1 as a covariate to control for individual

Table 1
Descriptive statistics for dependent measures: means (standard deviations).

	Time 1	Time 2	Time 2	Time 2
		Control	Other-create	Self-create
Self-Referencing	–	2.34 (0.85)	3.18 (0.68)	3.24 (0.87)
Self-Brand Congruity	–	2.39 (0.96)	2.85 (0.75)	2.97 (1.07)
Brand Attitude	3.80 (1.04)	3.31 (1.03)	3.95 (0.77)	3.86 (0.91)

differences in prior attitudes. Results indicated that different experimental conditions led to different perceptions of control over the advertisement creation process, $F(1, 75) = 15.84, p < 0.01, d = 3.66$. Post-hoc analyses using the LSD test indicated that the other-create condition ($M = 3.02, SD = 0.90$) led to significantly higher perceptions of control than the control condition ($M = 2.32, SD = 0.92$), and significantly lower perceptions of control than the self-create condition ($M = 3.87, SD = 0.94$). The self-create condition elicited the highest level of perceived control.

4.5.1. Brand attitude

An ANCOVA was conducted with self-brand congruity as the dependent variable, and the same independent variable and covariate. Results indicated that different experimental treatments led to significantly different levels of perceived self-brand congruity across conditions, $F(1, 75) = 7.36, p = 0.001, d = 1.70$. Post-hoc analyses using the LSD test indicated that the other-create condition ($M = 3.95, SD = 0.77$) and the self-create condition ($M = 3.86, SD = 0.93$) led to significantly higher perceptions of self-brand congruity than the control condition ($M = 3.31, SD = 1.03$). The self-create and other-create conditions were not significantly different from each other. Thus, H3a was supported but H3b was not.

4.5.2. Serial mediation analysis

To test the underlying mechanisms driving H3, a serial mediation analysis was conducted with PROCESS using 1000 boot strap samples (Model 6; Hayes, 2012). The variable of experimental condition was contrast coded following the guidelines proposed by West et al. (1996). First, the effect of treatment conditions (other-create coded as $-1/3$, self create coded as $1/3$) on brand attitude at Time 2 (controlling for pre-existing brand attitude at Time 1) was compared against the control condition (coded as $2/3$). The contrast coded experimental condition was entered as the independent variable, self-referencing and self-brand congruity as mediators in that order, and brand attitude at Time 2 as the dependent variable.

Results confirmed that exposure to SEAs led to greater self-referencing ($b = -1.30, p < 0.01$) than being exposed to advertisements with no self-endorsing. Greater self-referencing led to greater self-brand congruity ($b = 0.56, p < 0.01$), and ultimately more favorable brand attitude ($b = 0.29, p = 0.01$). The direct effect from the contrast coded experimental condition to brand attitude was no longer significant when controlled for the mediators ($b = -0.39, p = 0.09$). The indirect effect from experimental condition to self-referencing to self-brand congruity and finally brand attitude at Time 2 was significant (effect size = $-0.21, 95\% CI [-0.33, -0.09]$). A second serial mediation analysis was conducted with the same variables, but with the order of the mediators switched, to explore whether the indirect pathway would still hold with self-brand congruity preceding self-referencing. Results confirmed that the indirect effect from experimental condition to self-brand congruity to self-referencing and finally brand attitude at Time 2 was significant (effect size = $-0.11, 95\% CI [-0.31, -0.02]$). However, the effect size was half that of the first indirect mediation pathway.

A second serial mediation test was conducted to compare the effect of other-created SEAs (coded $-1/2$) against self-created SEAs (coded $1/2$) independently of the control condition (coded 0). Results confirmed that exposure to self-created SEAs led to greater self-referencing ($b = 0.93, p < 0.01$) than being exposed to other-created SEAs. Greater self-referencing led to greater self-brand congruity ($b = 0.56, p < 0.01$), and ultimately more favorable brand attitude ($b = 0.29, p = 0.01$). The direct effect from the contrast coded experimental condition to brand attitude was no longer significant when controlled for the mediators ($b = 0.12, p = 0.63$). The indirect effect from experimental condition to self-referencing to self-brand congruity and finally brand attitude at Time 2 was significant (effect size = $0.15, 95\% CI [0.05, 0.36]$). A second serial mediation analysis was conducted with the same variables, but with order of the mediators switched, to explore whether the indirect pathway would still hold with self-brand congruity preceding self-referencing. Results confirmed that the indirect effect from experimental condition to self-brand congruity to self-referencing and finally brand attitude at Time 2 was significant (effect size = $0.08, 95\% CI [0.002, 0.28]$). Again, the effect size was half that of the first indirect mediation pathway. Thus, H4 was confirmed. Self-created SEAs led to greater self-referencing than SEAs created by others or advertisements with no self-endorsing at all. High self-referencing, in turn, elicited greater self-brand congruity, and ultimately more favorable brand attitudes.

4.6. Discussion

These findings build on the results of Study 1 in several ways. Existing brands were used, and the SEAs were embedded within a more realistic background of a website that users might typically come across while browsing the Internet to increase the generalizability of the results. Study 2 confirmed that self-endorsing favorably affects preferences for well-known and existing brands even when competing against other information content. Furthermore, to parse out the effect of agency, the effect of self-created SEAs was compared against the effect of other-created SEAs. Although no direct effects of agency on brand attitude were observed, several underlying mechanisms that indirectly affected brand attitude were identified: self-created SEAs led to greater self-referenced encoding. High self-referencing, in turn, led to greater perceptions of self-brand congruity, and ultimately favorable brand attitudes. Although the indirect mediation pathway was still significant when the order of the mediator was switched (i.e., agency \rightarrow self-congruity \rightarrow self-referencing \rightarrow brand attitude), the effect size for the originally hypothesized pathway was twice as large.

5. General discussion and conclusion

Across two studies, we demonstrated the impact of self-endorsing on brand attitudes within the context of digital advertisements; the virtual self seems to have a meaningful influence on the physical self in promoting favorable brand attitudes. Despite a number of major brands actively incorporating the use of virtual reality technology in their marketing and advertising efforts (Delo, 2014), and social networking sites such as LinkedIn and Snapchat incorporating personal information in their advertisement campaigns, research and academic discourse on the potential of virtual selves in advertising has lagged ruefully behind. The current set of studies aimed to reexamine the boundaries of the extant knowledge on applying self cues in persuasive messages in a digital environment.

5.1. Theoretical contributions of research on self-endorsing, the influence of the virtual self

Virtual selves in the context of self-endorsing offer several unique features that cannot be mimicked by physical selves. Belk (2013) discussed some of the theoretical implications of virtual selves in the context of consumer behavior in the digital world, including the ability to create multiple virtual selves. Whereas there is only one physical self, the virtual self may represent the self concept in various forms, ranging from names, pictures, video, and avatars. Theoretically, this suggests the decoupling of appearance and behavior in virtual representations of the self; virtual selves may look photorealistically like the physical self but behave completely differently (Ahn et al., 2011). Facilitated by widely available computer software and an abundance of publicly available personal information on social networking sites, the virtual self may be manipulated and doctored to appear in any brand relevant context, influencing brand attitudes held by the physical self. For example, although the physical self may have never visited a certain restaurant, *Snapchat* users may apply digital layers that are sponsored by that restaurant (i.e., sponsored stickers) over their selfies that can then portray their virtual selves endorsing the restaurant's food, thereby endorsing the brand. Findings from the current set of studies indicate that this activity is likely to lead to favorable brand attitude about the restaurant.

The concept of self-endorsing builds on earlier work looking at tailored messages (Kreuter et al., 1999; Skinner et al., 1994) by taking personalization to the extreme in an advertising context and thereby introduces the potential for an interesting conflict: the favorable effect of personalization versus the negative effect of perceived invasion of privacy. Across both studies, results indicated that any level of self-endorsing led to more favorable brand attitudes than no self-endorsing and the incorporation of more explicit self cues (i.e., combination of names and pictures of the self) led to greater effectiveness. A rich collection of literature points to the familiarity and the positivity biases individuals hold regarding themselves (Baumeister, 1998; Pelham et al., 2002). Although prior research would suggest that the explicit knowledge of persuasion attempts, as is evident in SEAs, often leads to negative affect and psychological reactance (Friestad & Wright, 1994; White et al., 2008), it seems that SEAs present a challenge for individuals to negate persuasion efforts made by our virtual selves. This echoes the recent finding that even when participants were aware of persuasion attempts of native advertisements, high perceived utility of the advertisement's content led to favorable brand perceptions (Sweetser, Ahn, Golan, & Hochman, 2016). The current findings lend further insights on the boundary conditions of persuasion knowledge—the negative effects of persuasion knowledge may be counterbalanced by a positive element (e.g., self cues, high information utility) presented in the advertisement.

The current studies shed light on the underlying mechanisms driving the observed outcomes. The findings support previous research, which demonstrated that tailored messages containing self cues trigger self-referenced encoding of the new information (Dijkstra, 2005; Hong & Zinkhan, 1995). Furthermore, stronger self-referencing was triggered when individuals were presented with both verbal and visual virtual self cues in the form of names and pictures of the self (vs. less self cues; Study 1) as well as when they were presented with the SEA that they created (vs. other-created SEAs; Study 2). These results suggest that when messages generate greater explicit and active engagement of the self-concept, they may be able to overcome the barriers of possible psychological reactance toward excessive personalization. Self-endorsing may then be more effective as an advertising strategy than the cookies-based behavioral targeting that is typically used in

current digital advertising campaigns and often a source of advertising avoidance (Goldfarb & Tucker, 2011). The finding that using both verbal and visual virtual self cues was more effective in eliciting favorable brand attitudes than visual self cues alone lends further empirical support for the high persuasive impact of dual encoding processes (i.e., activating both the visual and the verbal encoding processes) over the picture-superiority effect (i.e., visual cues yield greater impact than verbal cues) in the context of digital advertisements.

Study 2 expanded the investigation of underlying mechanisms of tailored messages by demonstrating that high self-referencing elicits high self-brand congruity. In the context of advertising, when brand information is encoded using self schemas (i.e., self-referencing), this seems to strengthen the association between the self and the brand, leading to perceptions of self-brand congruity. Earlier research has indicated that when individuals perceive high congruity between the brand image and their self concepts, it leads to favorable brand preferences (Sirgy, 1982) because brands are considered an expression of the self (Escalas & Bettman, 2003) and people are inherently motivated to maintain a consistent representation of the self (Festinger, 1954). The current findings suggest that even if consumers do not initially perceive high self-brand congruity, using SEAs to elicit high self-referential encoding is likely to promote self-brand congruity and ultimately favorable brand attitudes.

Finally, the element of agency in self-endorsing was parsed out and tested independently. Although no direct effects of agency in self-endorsing was found on brand attitude, indirect effects indicated that being exposed to a self-created SEA leads to greater self-referencing, self-brand congruity, and ultimately more favorable brand attitude than being exposed to other-created SEAs. The fact that switching the order of mediators in the indirect pathway led to only half of the original effect size supports the argument that self-referencing and ensuing self-brand congruity elicited by self-created SEAs may be more powerful than advertisements that present high self-brand congruity which then leads to self-referencing.

5.2. Practical contributions of self-endorsed advertising

Practically, SEAs allow advertisers to gain the best of both worlds: a highly familiar endorser for their brands as well as complete control over the behavior of the endorser. With over 1.59 billion active Facebook users as of December 2015 (Adweek, 2016), social networking sites are more popular than ever, providing a rich collection of personal information to advertisers. Furthermore, with the advent of big data research, powerful computer software has been developed to glean hundreds of thousands of personal accounts of social networking sites in a matter of minutes. These developments suggest that self-endorsing may provide a cost- and labor-effective solution for advertisers to deliver highly engaging persuasive message. As popular social networking sites continue to realize the effectiveness of self-endorsing strategies, more personal information will be fused with brand information.

Snapchat, for instance, has been actively experimenting with the topic of agency as tested in Study 2. By providing sponsored filters that allow users to create their own SEAs, the company has created a lucrative revenue source as well as an effective means of reducing concerns of negative responses from its 100 million users. The question of agency will continue to be an interesting topic of investigation for both academics and practitioners as this volitional participation in the creation of SEAs blurs several boundaries understood in the traditional sense: between virtual and physical selves; between content providers and consumers; and between advertisers and audiences.

This blurring of traditional boundaries may also be observed in another recent trend in advertising, native advertisements, which involve presenting advertising content that closely resembles non-advertising content in online platforms (Sweetser, Golan, Ahn, & Hochman, 2016). Both SEAs and native advertisements may be interpreted as advertisers' efforts to counter consumers' increasing maturity in identifying and resisting advertising messages. However, whereas recent work on native advertising suggests that native advertisements may simply go unnoticed among the clutter of non-advertised content (Wojdowski & Evans, 2016), SEAs may pose greater ethical concerns because of the tight relationship it has with the self. Because the human brain is hardwired to think egocentrically (Baumeister, 1998), it would be extremely difficult to ignore or negate brand messages that are fused with strong self cues.

5.3. Self-endorsing and ethical debates

Considering its ease of creation relative to its persuasive strength, SEAs offer a simple, practical, and innovative means to break through the clutter of persuasive messages that surround an individual. However, its relative ease of creation and resultant persuasive power brings forth some important ethical questions yet to be addressed on incorporating what may be considered highly personal information within advertising contexts. Although self-endorsing triggers favorable responses because the visual and verbal self cues are registered in the mind as symbols that represent the self, is it just a stranger masquerading in the guise of the self if the physical self is not in control of the virtual self? When the familiarity and the positivity biases we hold regarding ourselves make it difficult for us to negate anything that is said by our virtual selves, is this communication tactic on the borderline of manipulation rather than persuasion? These, and many others, are critical questions that challenge the traditional paradigm of advertising and persuasive communication.

Furthermore, these developments pose the possibility of powerful but potentially controversial scenarios for new types of advertising that may be highly effective to vulnerable audiences, such as children or the elderly. For example, after watching a SEA featuring him- or herself playing with Mickey Mouse, a child may develop strong affinity for Mickey Mouse characters and related products although this event never occurred in the physical world. With minors and teens sharing more personal information on social media sites than ever (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013), future research should investigate the legal and ethical concerns of using SEAs on potentially vulnerable audiences.

SEAs could be created unbeknownst to the individual for brands or products that are sensitive or controversial. An individual's name and picture may be incorporated into an advertisement that goes against his or her values or beliefs. For example, a teen's Facebook profile photograph was used to advertise a website with pornographic content (Sanghani, 2014). Earlier studies have indicated that exposure to media content leads to desensitization or normalization of problem behaviors (Brown & L'Engle, 2009), it is possible that seeing the self endorsing controversial brands or products could amplify desensitization or normalization.

Other studies have also indicated that personalization in advertising may be a double-edged sword as it increases consumer purchase intention and along with feelings of intrusiveness that negatively affect attitude towards advertisements and brands (van Doorn & Hoekstra, 2013). But when consumers perceive greater control over the use of their personal data in advertisements, they are more likely to trust personalized advertising and reduce their privacy concerns (Eastin, Brinson, Doorey, & Wilcox, 2016; Song, Kim, Kim, Lee, & Lee, 2016; Tucker, 2014). For instance, Song et al. (2016) examined e-mail advertising and found that

personalization in e-mail increased consumers' risk perceptions of privacy, and this relationship was moderated by consumers' level of control over their personal information.

In light of the research, it is important for advertisers who use personalized advertising to demonstrate that they are concerned about protecting consumers' personal information and privacy online. Aguirre et al. (2015) found that when advertisers engage in overt information collection, or openly disclose their use of consumers' personal data, consumers are more likely to click on advertisements despite greater personalization. Conversely, when advertisers collect information covertly, or do not disclose their use of consumer information, consumers are likely to experience greater vulnerability, and therefore develop more negative feelings towards advertised products. As such, it will be in advertisers' best interests to publicly disclose their use of personalized information so as to build greater trust among consumers. In this way, consumers will be more positive towards ads, be more likely to click-through, and have greater brand loyalty and purchase intention towards products (Eastin et al., 2016; Song et al., 2016).

Control over personal information is often perceived as a critical attempt to protect individual privacy by industry and policymakers, and marketers and advertisers have argued that consumers have already been provided with the means to manage third party access to their personal information. However, research has found unintended effects by showing that control can desensitize individuals' concerns for privacy (Xu, Teo, Tan & Agarwal, 2009). For example, one study shows that participants who were given greater control over how much of their personal information was published publicly ended up disclosing more sensitive information to a broader group of audiences (Brandimarte, Acquisti, & Loewenstein, 2013). This unintended effect brings forth additional ethical concerns as the conventional wisdom advocated by brands and corporates that consumer self-regulation is sufficient for privacy protection. In the context of SEAs, greater control over how personal information is collected and used might appeal to consumers as consumers themselves may endorse certain brands for self-expression purposes, but a higher level of control may not always help improve privacy protection.

Finally, Bleier and Eisenbeiss (2015) examined personalized digital advertising, and found that consumers' trust in particular retailers plays a crucial role in determining their responses to advertisements. Specifically, less trusted retailers who use personalized advertising may cause consumers to have more negative responses compared to more trusted retailers, who are able to personalize advertisements to a greater extent without psychological reactance from consumers. This has important ethical implications for SEAs being used by mega corporations that have built high levels of trust among their clientele—these SEAs are likely to have far greater impact than the same strategy being used by lesser known companies, further intensifying the market entry barrier for small to medium sized companies.

6. Limitations and future directions

Although the current findings demonstrate the potential of SEAs across two studies, they are qualified by several limitations. First, although young adults were an appropriate population for this experimental context given their frequent and wide use of social networking sites, the study sample restricts the generalizability of our findings. Younger audiences may have had prior exposure to SEAs through their everyday use of social networking sites such as *Snapchat*, and the existing familiarity may have reduced psychological reactance toward SEAs presented in the current studies. Also, the sample collected for both studies were predominantly female, which may have biased the observed data, driven by sex

differences. Prior studies have documented sex differences in information processing. According to the selectivity model (Meyers-Levy & Sternthal, 1991; Meyers-Levy, 1989), males tend to focus on highly salient cues that facilitate message processing, whereas females tend to use a more comprehensive and effortful strategy that makes use of all available cues. The selectivity model has been confirmed in the advertising context as well, with males focusing selectively on immediately noticeable cues in advertisements and females meticulously focusing on all available information (Darley & Smith, 1995). Consequently, males in the current study may have been much more attuned to the highly salient self cues whereas females may have been much more critical of the of all cues available in the SEA. Given that we observed meaningful SEA effects despite the predominantly female sample is encouraging in demonstrating the robustness of SEA effects. However, future studies should explore self-endorsing effects for a wider range of age groups and demographic backgrounds for both males and females for greater generalizability of the observed results.

Also, the effect of an SEA created with name only compared to other self cue elements remains inconclusive. Because an individual is likely exposed to his or her name as often as or more often than pictures, it may be that the level of self-referencing elicited by an individual's name is not significantly different from that elicited by an individual's picture. Or it may simply be an artifact of insufficient power. Future studies should take a deeper look into the comparative effect of SEAs created with different self cues.

The SEAs tested in the current studies were based on profile pictures that had minimal manipulation for experimental control. However, pictures used in advertising can be easily manipulated to change physical features such as skin tone, hair color, or even bone structure; the models' attractiveness is typically enhanced in advertisements. Individuals harbor both realistic and idealized visions of their self-concepts, and these ideal self-concepts have been shown to influence consumer decisions (Landon, 1974). Future research should explore the effect of SEAs that have been digitally enhanced to reflect consumers' ideal selves rather than their real selves on brand attitudes.

Another point of potential limitation in interpreting the current findings is the fact that SEAs that were created by others in Study 2 were constructed by "known" others, that is, the participants were aware that the SEAs were created by the researchers of the study, rather than "unknown" others. Thus, the favorable brand attitudes of other-created SEAs observed in Study 2 may only be applied when an individual is aware of who the third party creators are and where the third party obtained the self cues (i.e., in this study, via study participation). Given that privacy concerns are likely greater when being exposed to SEAs from unknown third parties, future studies should explore the impact of different third party sources.

As digital media allow us to extend our selves through virtual representations, traditional conceptualizations of advertising—and more widely of persuasive communication—need to be reexamined. Self-endorsing presents a strategy that combines the true and tested benefits of using the self in the persuasion process via a virtual entity that may easily be controlled by others. Although future research has yet to fully explore the conceptual details and boundaries of self-endorsing, the current set of studies offer strong preliminary data on the theoretical and practical potentials of this novel persuasive strategy in an era of digital media technology.

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