

Attitude Toward the Viral Ad: Expanding Traditional Advertising Models to Interactive Advertising

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Abstract

As a form of advertising, viral video (VV) advertising is distinct in that its communication medium is the social connections between individuals instead of formal media. After viewing VV advertising, people are engaged in two independent but interrelated processes, i.e., video sharing and embedded brand information processing. Previous research has not examined the interaction between the two processes. This study expands on the mediation of attitude toward the advertisement model proposed by MacKenzie, Lutz, and Belch (1986). Experimental results from three viral video advertisements show that attitude toward the VV advertisement is the major factor affecting video sharing, but attitude toward the brand also has a significant impact on sharing activity. Affect transfer hypothesis (ATH) and its extended models are optimal in explaining viral video advertising, which is different from prior research on non-viral advertising that suggests dual mediation hypothesis as the optimal explanatory theory.

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Keywords: Viral video advertising; Sharing intention; Advertisement attitudes; Brand attitudes

Introduction

With the explosive growth of social media (e.g., YouTube and Facebook) in recent years, viral video (VV) advertising, which involves video-based messages released through interactive, network-based channels, has been used by companies to disseminate their product and brand information. A survey by the Association of National Advertisers (ANA) showed that half of marketers used VV advertising for marketing purposes in 2009 (McCollum 2009), and this usage reached 70% in 2010 according to another survey (Web Video Marketing Council, Flimp Media and ExactTarget 2010). In spite of rapid adoption of the VV advertising by advertisers, how VV advertising

accomplishes desired advertising effects remains unclear to academic researchers and practitioners.

VV advertising stands in contrast to mass media advertising (such as television advertising) in that it is delivered in an interactive, Web-based environment characterized by viewer pull and control rather than sponsor push. Interesting video content and embedded brand information are two critical components of VV advertising that differ from traditional TV advertising (Carlin 2007; Hinz et al. 2011). Interesting content enhances the possibility of video sharing, or the formation of sharing intention (SI) (Huang, Lin, and Lin 2009), while embedded brand information affects the marketing effectiveness of VV advertising, especially the formation of brand attitudes (A_b). Thus both the viewer's reaction to the video and to the embedded brand are important for understanding the ultimate effects of a viral video advertisement. Because of this, questions worthy of systematic investigation arise. What effects emerge when processing of video content occurs simultaneously with the processing of brand information embedded in the video?

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How are sharing intention and the formation of brand attitudes interrelated?

Some academic studies have examined SI (e.g., Belk 2010; Bock et al. 2005; Huang, Lin, and Lin 2009) as well as antecedents and consequences of A_b in the traditional advertising context (e.g., Homer 1990; MacKenzie, Lutz, and Belch 1986; Mitchell and Olson 1981). Others have investigated areas tangential to VV advertising, such as e-WOM (e.g., Duan, Gu, and Whinston 2008; Hennig-Thurau et al. 2004; Lee and Song 2010), social media (e.g., Agiichstein et al. 2008; Kaplan and Haenlein 2010), and viral marketing (e.g., Brown, Bhadury, and Pope 2010; De Bruyn and Lilien 2008; Ho and Dempsey 2010; Phelps et al. 2004). To the best of our knowledge, no research has explored the interrelationship of video sharing and brand information processing in the context of VV advertising. As an attempt to fill this gap, this study examines the interaction between people's intention to share a viral video and their processing of information related to the brand embedded in the video.

We posit that attitude toward the VV advertisement (A_v) plays a critical role in integrating intention of video sharing and formation of brand attitudes. When exposed to a VV advertisement, people will form a positive or negative attitude toward it, and then generate an intention to share or not share the video with others. At the same time, VV advertising contains brand information, and its mechanisms resemble those of traditional advertising. Therefore, A_v equates attitude toward the advertisement (A_{ad}) when we regard VV advertising as a unique form of advertisement. In this light, A_v may influence the formation of A_b and purchase intention (PI) when people are exposed to VV advertising, similar to how attitudes toward traditional advertising directly or indirectly affect the formation of A_b and PI, as suggested in previous advertising literature (e.g., Brown and Stayman 1992).

To better understand the mechanism and effects of VV advertising, we extend the mediating model of A_{ad} proposed by MacKenzie, Lutz, and Belch (1986) to investigate the interrelationship between video content sharing and brand information processing, and explore the reciprocal effects among A_v , A_b , SI, and PI. This paper is organized as follows. First, a conceptual model for the interaction of video sharing and brand information processing, as well as hypotheses about it, are proposed. Then we test the goodness of fit for the model and examine the relationship between video sharing and formation of brand attitude by using data from experiments involving three video clips. In conclusion, we discuss the theoretical and practical implications of the research.

Conceptual Framework and Hypotheses

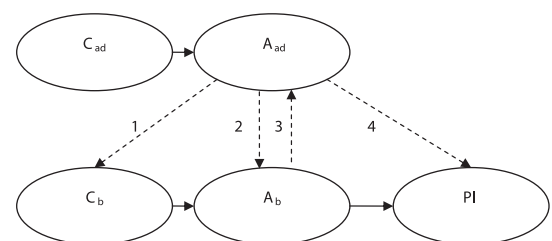
The Conceptual Model

The mediating role of A_{ad} can be traced to two sources. One source is explained using the cognitive response model (Lutz 1977; Olson, Toy, and Dover 1982; Wright 1973). This model posits that people's exposure to certain information first induces a cognitive response, which will affect attitude formation, and the attitude will in turn influence the formation of intentions. Therefore, a chain

reaction of “cognitive response → attitude → intention” ensues after exposure to advertising. The other source is explained in the work of Mitchell and Olson (1981) and Shimp (1981). They found that besides Fishbein's beliefs, A_{ad} , treated as affective reaction toward an ad (Lutz 1985), can also mediate A_b . A large number of subsequent studies began investigating the role of A_{ad} and suggested that A_{ad} is a critical indicator of advertising effectiveness (Brown and Stayman 1992).

Based on the two sources above, MacKenzie, Lutz, and Belch (1986) identified the “brand-related cognitions (C_b) → A_b → PI” and the “ad-related cognitions (C_{ad}) → A_{ad} ” linkages based on the cognitive response model, and postulated four alternative causal models to explain the mediating effects of A_{ad} on A_b and PI (see Fig. 1). The first one is affect transfer hypothesis (ATH) which postulates that A_{ad} exerts a one-way influence on A_b . The dual mediation hypothesis (DMH) specifies that A_{ad} has a direct effect on A_b and an indirect effect on A_b through brand cognition (C_b). The reciprocal mediation hypothesis (RMH) posits an interactive relationship between A_{ad} and A_b . The fourth, the independent influences hypothesis (IIH), assumes no causal relationship between A_{ad} and A_b , and instead A_{ad} will be an independent determinant of PI. MacKenzie, Lutz, and Belch (1986) found that DMH is the most robust fit to their experimental data; their results were also supported by other studies (e.g., Homer 1990; Karson and Fisher 2005a; Karson and Fisher 2005b).

In the current study, the causal models proposed by MacKenzie, Lutz, and Belch (1986) will be used in conceptualizing the effect of VV advertising. This is appropriate for several reasons. First, as VV advertising is a unique form of advertising and A_v is a representation of A_{ad} in this unique context, theories and models from previous research on A_{ad} are applicable to the study of VV advertising. Second, according to the cognitive response model (Lutz 1977; Olson, Toy, and Dover 1982; Wright 1973), the pattern of cognition → attitude → intention can be demonstrated not only in the context of brand information processing, but also by the formation of an intention to share. Therefore, the hypothetical model proposed by MacKenzie, Lutz, and Belch (1986) can be extended to fit the two processes of VV advertising. Third, video sharing intention and brand attitude formation may occur at the same time in the context of the VV advertising, and the MacKenzie, Lutz, and Belch (1986) causal



Where:

C_{ad} = advertising cognition; A_{ad} = attitude toward advertising; C_b = brand cognition; A_b = brand attitudes; PI = purchase intention

Fig. 1. The mediating model of A_{ad} . The labeled linkage exists when the following hypothesis is verified: Affect Transfer Hypothesis (ATH): 2; Dual Mediation Hypothesis (DMH): 1, 2. Reciprocal Mediation (RMH): 2, 3; Independent Influences Hypotheses (IIH): 4. Source: MacKenzie, Lutz, and Belch (1986).

model can be used to analyze the reciprocal effect of these two processes simultaneously. For instance, the $A_v \rightarrow A_b$ linkage and the $A_b \rightarrow SI$ linkage can be estimated in the same model. In other words, the A_{ad} model can measure the effects of VV advertising from a comprehensive approach that addresses multiple linkages, and thus has extensive explanatory power.

We extend the MacKenzie, Lutz, and Belch (1986) causal model in two dimensions in order to account for the special features of VV advertising. First, we add the $A_v \rightarrow SI$ linkage into the causal model and propose the chain reaction of “VV advertisement cognitions (C_v) $\rightarrow A_v \rightarrow SI$ ” based on the cognitive response model. We then add the $A_b \rightarrow SI$ linkage into the model to estimate the reciprocal effects between brand attitude and sharing intention. In addition, we retain the linkages of MacKenzie, Lutz, and Belch (1986) four hypotheses in the extended hypothetical model, since all of these linkages need to be reexamined in the VV advertising viewing context. Therefore, we propose the conceptual model for VV advertising presented in Fig. 2.

Hypothesis Development

The $C_v \rightarrow A_v \rightarrow SI$ Relationship

According to the cognitive response model (Fishbein and Ajzen 1975; Lutz 1977; Olson, Toy, and Dover 1982; Wright 1973), cognitive thought responses such as counterarguments, source derogations, support arguments, and curiosity statements can be elicited during exposure to a VV advertisement. Those responses will directly result in a favorable or an unfavorable attitude toward a VV advertisement and finally indirectly affect viewers’ sharing intention through their attitudes. Therefore, a response chain of “ $C_v \rightarrow A_v \rightarrow SI$ ” is anticipated under the situation of VV advertising viewing.

Only when people have a strong affective response to the video content will they be willing to forward it to others. This $A_v \rightarrow SI$ linkage has also been indicated by previous studies. Phelps et al. (2004), for example, suggest that the likelihood of passing along email is closely related to the video’s information content — only information evoking strong emotions (e.g.,

humor, fear, sadness or inspiration) is likely to be disseminated. In the case of viral advertising, Porter and Golan (2006) find that the passing-along of information depends on extraordinary content rather than on embedded product information, and that provocative content plays a critical role. By comparing viral advertising with television advertising, they determine that viral advertising more often than not resorts to appeals of sex, nudity and violence, which reflects “common human motivations” (Porter and Golan 2006, p 35). Brown (2009), after investigating the effects of viral video features, points out that videos with highly creative and distinctive content will have significantly higher online viral viewing. While Brown, Bhadury, and Pope (2010), focusing on comedic violence in viral advertising, find that content of extreme comedic violence can engage people’s interest, create positive attitudes toward the advertisement, and thus increase sharing activity. Hence, we propose the following hypothesis:

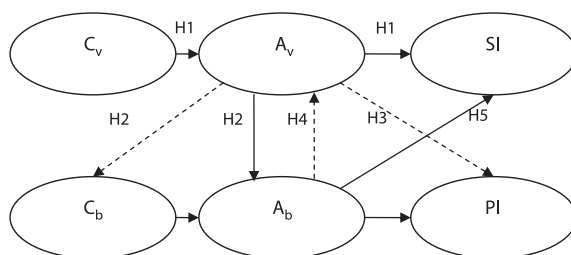
H1. According to the cognitive response model, C_v has a direct impact on A_v , while A_v has a direct impact on SI. Thus, the $C_v \rightarrow A_v \rightarrow SI$ link exists in the case of VV advertisement exposure.

The $A_v \rightarrow C_b$ and the $A_v \rightarrow A_b$ Relationship

DMH has been shown to be the optimal model among MacKenzie, Lutz, and Belch (1986) four hypothetical models. If it is also supported in the context of VV advertising exposure, then A_v will significantly influence both C_b and A_b . However, the $A_v \rightarrow C_b$ and $A_v \rightarrow A_b$ relationship of VV advertising will be different from traditional advertising because VV advertising combines the two processes of content sharing and brand information processing.

Since people focus most of their attention on video content rather than on brand information (Brown 2009), VV advertising mostly relies on provocative and interesting content to generate people’s interest in passing the content along, and thus people will have high advertising content involvement and low advertising message involvement. In this sense, VV advertising follows a peripheral route to persuasion (MacKenzie and Lutz 1989; Petty, Cacioppo, and Schumann 1983). In this situation, people will transfer their interest in video content to embedded brand attitude (MacKenzie and Lutz 1989; MacKenzie, Lutz, and Belch 1986), which causes A_v to affect A_b significantly. Previous empirical studies also support this point of view. For instance, Weinberger and Gulas (1992) research on humorous advertisements demonstrates that humorous content leads to affection for the brand. Research by Brown, Bhadury, and Pope (2010) on viral advertising also shows that content of extreme comedic violence has a positive impact on brand evaluation, which supports the existence of the $A_v \rightarrow A_b$ link. Therefore, in the context of exposure to VV advertising, affect transfer can be predicted and the linkage of $A_v \rightarrow A_b$ can be supported due to the peripheral processing of VV advertising.

However, the $A_v \rightarrow C_b$ linkage is somewhat different from the $A_v \rightarrow A_b$ linkage. According to the elaboration likelihood model Petty, Cacioppo, and Schumann (1983), $A_v \rightarrow A_b$ linkage represents the peripheral route to persuasion, while $C_b \rightarrow A_b$



Where:

C_v = VV advertisement cognition

A_v = attitude toward the VV advertisement

SI = sharing intention

C_b = embedded brand cognition

A_b = embedded brand attitudes

PI = purchase intention for the embedded product

Fig. 2. Hypothetical full extended causal model of video advertising sharing. Note: Solid lines indicate predicted significant linkages, while dotted lines indicate predicted non-significant linkages.

linkage represents the central route to persuasion (MacKenzie, Lutz, and Belch 1986). A_v has no significant impact on C_b unless people think about the brand at the very same time that they view an advertisement. In other words, if people view an advertisement but do not associate it with the brand, A_v would have no significant impact on C_b (Sicilia, Ruiz, and Reynolds 2006). According to the argument above, the $A_v \rightarrow C_b$ linkage will not be significant for three main reasons. First, in order to prompt people's intention to share, most videos employ a storyline to make the content engaging, while the embedded brand information appears for only a short period of time at the end of the video. This reduces the possibility of people's association with the embedded brand, and as a result the impact of A_v on C_b is not significant. Second, people share videos out of "desires for fun, entertainment and social connection" (Phelps et al. 2004, p. 345), so the audience focuses their attention on the content of the video instead of the embedded brand or product information. Some researchers even suggest that "if the content is provocative enough, the product does not have to provide exceptional value" (Porter and Golan 2006, p. 33). In this sense, the possibility that people will associate with the embedded brand when viewing viral video advertising will be reduced. MacKenzie and Lutz (1989) also posit that the relationship between ad attitudes and brand cognition is weak under the situation of high ad execution involvement and low ad message involvement. Therefore, we propose the following hypothesis:

H2. The mediation of A_v follows the principles of affect transfer hypothesis (ATH), therefore A_v has a positive impact on attitude toward the embedded brand (A_b), but has no significant impact on embedded brand cognition (C_b).

The $A_v \rightarrow PI$ Relationship

Prior research has arrived at different conclusions regarding the impact of attitude toward the advertisement on purchase intention. Meta-analysis by Brown and Stayman (1992) reveals that the coefficient for the impact of attitude toward the advertisement on purchase intention ranges from .13 to .75, indicating a mix of non-significant and significant findings. Some research suggests that attitude toward the advertisement has a significant impact on purchase intention (e.g., Karson and Fisher 2005b; Lord, Lee, and Sauer 1995), while some suggests otherwise (e.g., Machleit and Dale 1988).

In proposing H3, MacKenzie, Lutz, and Belch (1986) believe that brand attitudes and attitude toward the advertisement represent subjective meaning and impersonal attitude, respectively, and both attitudes have a significant impact on purchase intention. Impersonal attitude reflects all aspects of the purchase situation unrelated to product, whereas advertising, being one type of purchase situation, can be represented by attitude toward the advertisement (MacKenzie, Lutz, and Belch 1986), and thus has a significant impact on purchase intention.

Yet viral video advertising differs from general online advertising in spite of the similarities between them. People do not consider video content as a purchase situation for the embedded brand, and as a result attitude toward the viral video advertisement (A_v) should not have a significant impact on

purchase intention (PI). The reasons are twofold. First, people pass along a video to share the interesting content rather than to communicate product information or recommend the product (De Bruyn and Lilien 2008; Ho and Dempsey 2010; Porter and Golan 2006). So, subconsciously people have separated video content from product information. In other words, people do not view the video as advertising and would reject video content as part of the purchase situation related to the embedded product. Second, major motivations for people to share video include inclusion, individualism, altruism, and enhancement (Ho and Dempsey 2010). If recipients consider the video to be an advertisement, they will become suspicious of the sender's motivations. This will reduce the utility for those who share the video, so the senders will try to avoid making the shared video look like an advertisement. To put it another way, the key to the success of viral advertising is for senders to perceive the value of sharing without feeling that they have been taken advantage of by the merchants (Dobele, Toleman, and Beverland 2005). Therefore, senders will refrain from forwarding videos that look like advertisements. Instead, they will opt for videos with interesting content to minimize the potential negative impact brought about by the embedding of product information on the brand. Thus, video content can hardly become a purchase situation for senders. Hence, we have the following hypothesis:

H3. Video content is not viewed as an element of the purchase situation, thus A_v does not have a direct impact on purchase intention (PI) for embedded product.

The $A_b \rightarrow A_v$ Relationship

MacKenzie, Lutz, and Belch (1986) assume a causal flow in both directions between A_{ad} and A_b based on balance theory in the RMH model. They predict that people will like both the ad and the brand or dislike both. However, previous research has found that the RMH is not superior to ATH or DMH in terms of explanatory power (e.g., Karson and Fisher 2005b; MacKenzie, Lutz, and Belch 1986), which demonstrates that the $A_b \rightarrow A_v$ linkage is not necessary.

Under the VV advertising viewing situation, the reciprocal mediation hypothesis needs to be examined. On the one hand, VV advertising includes two separable processes of video sharing and information processing, and on the other hand $A_b \rightarrow A_v$ linkage represents part of the reciprocal effects between embedded brand and video sharing. Meanwhile, balance theory also implies that A_b and A_v will affect each other in both directions. Hence, we have the following hypothesis:

H4. A_b has a positive impact on A_v , which indicates a reciprocal effect between the embedded brand and video sharing.

The $A_b \rightarrow SI$ Relationship

The $A_b \rightarrow SI$ relationship also partly represents reciprocal effects between embedded brand and video sharing. Prior research has provided support for the significant impact of brand attitude on purchase intention (e.g., Brown and Stayman 1992). For the direct impact of brand attitude on sharing intention, categorization theory (Cohen and Basu 1987; Sujana

1985) provides an appropriate explanatory framework. According to categorization theory, when consumers classify two objects into one category, their attitude toward one object will have a significant impact on their attitude toward the other. With respect to viral video advertising, when seeing brand information in a video, consumers will know the video is produced by a company associated with a particular brand. Although consumers focus their attention on video content, they still categorize the content and the brand into one category, and regard the brand information and video content as a whole, and as a result brand attitude may have a significant impact on video-sharing intention. In addition, video sharing does not bring monetary returns to individual consumers (Ho and Dempsey 2010); each act of sharing assists businesses in spreading brand information without compensation to consumers. Although people focus on video content, they may still ask the question “Why am I helping this brand?”. Naturally, people will not disseminate the video if they dislike the embedded brand. Thus, the level of affection for a brand (brand attitude) can directly influence the intention to share a video. Therefore, we have the following hypothesis:

H5. Since the video content and embedded brand are combined into one category by consumers, A_b has a significant impact on video sharing intention (SI).

Method

Stimuli

Videos used in the experimental study came from YouKu, the leading video-sharing site in China. Based on Phelps et al. (2004), we used such search terms as “funny,” “exciting,” “good,” and “entertaining” to search for appropriate videos using the site’s search engine. Then we screened through the videos, based on the following three criteria. First, the videos had to have high ratings and a large number of views. Second, the videos had to contain product and brand information to be considered viral video advertisements. Third, the videos had to contain a complete story, be no more than 5 min long, and have high audio-visual quality. After initial screening, sixty viral video advertisements were selected that met the above criteria. Next, two trained students further screened the videos, each picking the top twenty of their favorite videos based on their personal preference. Upon comparison, nine videos were selected by both students. Those nine videos were watched by thirty-six participants, played in a random sequence. After viewing, each participant was asked: “Suppose this is the first time you have watched this video. Would you like to share it with others?” Answers were given on a 7-point scale. Based on the mean values from this scale, three videos most likely to be shared by participants were selected for the experimental study.

The three selections from YouKu (a Chinese video-sharing site) included a funny video about the cultural background of Baidu (“Baidu video”), a dominant search engine in China; a funny video about the Buick of Shanghai GM (“GM video”); and a romantic marriage proposal video featuring Nokia

(“Nokia video”). At the time of selection, the first video was 110 s long and had 120,000 views. The second video was 191 s long and had 1.3 million views. The third video was 60 s long and had 180,000 views. All three videos contain extraordinary features and reflect the characteristics of pass-along information (Porter and Golan 2006).

Participants and Procedure

All experiments were conducted at routine class meetings in a research university in northern China. Undergraduate students from a variety of majors, including science, business, and the arts, were chosen as participants for the study. Before the experiment, the participants were told that this was an academic study examining their evaluation of online videos. Then the researchers showed the video through a projector, distributed the questionnaire to participants after viewing, and reviewed the questionnaire when collected. The experiment was a continuous and uninterrupted process during which participants were not allowed to communicate with one another. After the experiments, participants were offered gifts and were briefed on the purpose of the study.

We chose undergraduate students as participants because they are among the most active video sharers (Santos et al. 2009). Among the 602 participants, 359 were male and 243 were female with an average age of 19.2 (SD=1.07). Among them, 79.9% were science majors, 15.9% business majors, and 4.2% arts majors. Two hundred and eight watched the Baidu video, 210 watched the GM video, and 184 watched the Nokia video, all in similar classroom settings. The experiments were conducted in nine sessions (three sessions for each video), with 50 to 90 participants each. Each experiment lasted 15 to 20 min.

Measurement

We adopted the open-ended thought listing method to measure video cognition response and brand cognition response. The thought listing instructions were “please write down all thoughts, ideas, and images that occurred to you about the video *during* viewing” and “please write down all thoughts, ideas, and images that occurred to you about the advertised brand *during* viewing.” A coder collected all the responses, and separated them into brand- or video-related thoughts, global evaluation thoughts, and irrelevant thoughts. Global evaluation and irrelevant thoughts were not included in further analysis. Response coding was conducted by two independent, trained coders. Based on previous research (e.g., Karson and Fisher 2005b; Sicilia, Ruiz, and Reynolds 2006), opinions were classified into positive, neutral, or negative opinions, where positive opinions were coded as 1, neutral opinions as 0, and negative opinions as –1. Among the total of 1,204 opinions coded, the two coders agreed on 86% of them, and a third coder coded those they failed to agree on. The results of the coding are presented in Table 1.

We adopted seven-point scales for the measurement of attitudes and intention variables, where higher values represent

Table 1
Cognitive response categories and frequencies.

| Category | Baidu video | | GM video | | Nokia video | |
|---------------------------------------|-------------|------|-----------|------|-------------|------|
| | Frequency | % | Frequency | % | Frequency | % |
| VV advertisement cognitions (C_v) | | | | | | |
| Negative | 44 | 21.2 | 70 | 33.3 | 20 | 10.9 |
| Neutral | 98 | 47.1 | 62 | 29.5 | 121 | 65.8 |
| Positive | 66 | 31.7 | 78 | 37.1 | 43 | 23.4 |
| Brand cognition (C_b) | | | | | | |
| Negative | 33 | 15.9 | 28 | 13.3 | 19 | 10.3 |
| Neutral | 81 | 38.9 | 126 | 60.0 | 100 | 54.3 |
| Positive | 94 | 45.2 | 56 | 26.7 | 65 | 35.3 |

higher levels of response. Brand attitude was measured using the following items, good/bad (Coulter and Punj 1999; 2004; Mitchell 1986; Olson, Toy, and Dover 1982), like/dislike (Coulter and Punj 1999; 2004; Mitchell 1986; Olson, Toy, and Dover 1982), and high quality/low quality (Olson, Toy, and Dover 1982). Cronbach's Alpha in attitude toward brand for Baidu, GM and Nokia videos was .86, .89 and .88, respectively. Purchase intention was measured using two items, very likely to buy/not likely to buy (Mitchell 1986; Olson, Toy, and Dover 1982), and wise/foolish (MacKenzie, Lutz, and Belch 1986). Cronbach's Alpha for Baidu, GM, and Nokia videos in this measure was .83, .85 and .85.

For the measurement of attitudes toward VV advertisement, we drew on prior research (e.g., Karson and Fisher 2005a,b; MacKenzie, Lutz, and Belch 1986). As content is important to viral advertising, we added a measure of "degree of being extraordinary." The four items include overall reaction, favorable/unfavorable, interesting/uninteresting, and extraordinary/ordinary. Regarding this measure, Cronbach's Alpha for Baidu video, GM video, and Nokia video was .79, .85, and .77, respectively. We adopted three items to measure sharing intention, including pass-along probability (Brown, Bhadury, and Pope 2010), probability of telling others, and probability of talking about the video. Cronbach's Alpha for Baidu video, GM video, and Nokia video was .89, .84 and .87. For sharing intention, Cronbach's Alpha was .83, .85 and .86 for Baidu video, GM video and Nokia video. Means and standard deviations of sharing intention for the three videos were 4.45 (1.34), 4.26 (1.31) and 4.16 (1.46), respectively.

Results

We extended MacKenzie, Lutz, and Belch (1986) four original hypothetical models by adding the paths $A_v \rightarrow SI$ and $A_b \rightarrow SI$ (see Figs. 1 and 2), and analyzed the extended models via LISREL VIII. Each model produces a reasonable fit according to the statistical index CFI, NFI, and GFI (see Tables 2–5).

We first examined the $A_v \rightarrow SI$ link and the $A_b \rightarrow SI$ link by comparing chi square between MacKenzie, Lutz, and Belch (1986) common paths model and the extended model. When $A_v \rightarrow SI$ linkage was added to the original common paths model, the extended models were significantly improved for all videos (Baidu $\Delta\chi^2=46.58$, $p=.00$; GM $\Delta\chi^2=48.49$, $p=.00$; Nokia $\Delta\chi^2=39.56$, $p=.00$; $df=1$), and the $C_{ad} \rightarrow A_v$ and the $A_v \rightarrow SI$

were significant in all videos (see Table 5), which indicates that a " $C_v \rightarrow A_v \rightarrow SI$ " chain exists and H1 is supported.¹ Then we added the $A_b \rightarrow SI$ link to the former extended model and former extended common paths model. Results show that the model improved again compared with the former one for all videos (Baidu $\Delta\chi^2=4.70$, $p=.03$; GM $\Delta\chi^2=23.76$, $p=.00$; Nokia $\Delta\chi^2=8.52$, $p=.00$; $df=1$). Thus, the $A_b \rightarrow SI$ link also occurs in the VV advertising viewing context, which supports H5.

In order to find the best-fit model, we compared each extended model with the extended common paths model as shown in Fig. 2. Results show that the EIIH was clearly less adequate than the extended common paths model (Baidu $\Delta\chi^2=18.15$, $p=.00$; GM $\Delta\chi^2=20.78$, $p=.00$; Nokia $\Delta\chi^2=5.05$, $p=.08$; $df=3$), which does not support H3. However, there were no significant chi-square differences between EATH, EDMH, ERMH and the extended common paths model (for EATH, Baidu $\Delta\chi^2=3.21$; GM $\Delta\chi^2=.88$; Nokia $\Delta\chi^2=.10$; $\Delta df=3$; $p>.05$; for EDMH, Baidu $\Delta\chi^2=3.08$; GM $\Delta\chi^2=1.13$; Nokia $\Delta\chi^2=.10$; $\Delta df=2$; $p>.05$; for ERMH, Baidu $\Delta\chi^2=.33$; GM $\Delta\chi^2=.98$; Nokia $\Delta\chi^2=.02$; $df=2$; $p>.05$ (see Tables 2–5)).

Further comparison between EATH and EDMH (Baidu $\Delta\chi^2=.13$, $p>.05$; GM $\Delta\chi^2=.25$, $p>.05$; Nokia $\Delta\chi^2=.00$, $p>.05$; $df=1$) and the comparison between EATH and ERMH (Baidu $\Delta\chi^2=2.88$, $p=.09$; GM $\Delta\chi^2=.10$, $p>.05$; Nokia $\Delta\chi^2=.08$, $p>.05$; $df=1$) show that no significant chi square difference existed within these hypothetical models. The findings suggest that the $A_v \rightarrow C_b$, the $A_b \rightarrow A_v$ and the $A_v \rightarrow PI$ linkages are not necessary, and thus EATH is superior to all other hypothetical models (see Tables 2–5). These results indicate that H2 is partly supported, namely the $A_v \rightarrow A_b$ path is significant while $A_v \rightarrow C_b$ is not. Meanwhile, H4 is not supported, since $A_b \rightarrow A_v$ linkage is not necessary.

Discussion

Theoretical Implications

This study examines MacKenzie, Lutz, and Belch (1986) ITH, ATH, RMH, and DMH models within the VV advertising viewing context. Contrary to previous work stating that the DMH provides a better fit for the data than the other three, our findings show that the ATH model best represents the attitude formation process related to VV advertising. In this ATH model, A_v has a significant effect on A_b directly, but it has no significant effect on C_b and PI. Specifically, the significant $A_v \rightarrow A_b$ linkage suggests that when consumers are exposed to VV advertising, a peripheral route to persuasion will occur. Affect transfer from liking the video to favoring the brand will also occur. Furthermore, the non-significant $A_v \rightarrow C_b$ linkage

¹ We conduct mediation analyses using bootstrap and Sobel's test (Preacher and Hayes 2004; 2008; Zhao, Lynch, and Chen 2010). Sobel's z is significant in all three experiments (Baidu $z=4.24$; GM $z=4.87$; Nokia $z=3.27$), and 99% CI does not contain zero (Baidu $\{.15, .54\}$; GM $\{.18, .56\}$; Nokia $\{.12, .60\}$). The results suggest that indirect mediation effects exist.

Table 2
Structural estimates and goodness-of-fit indices: Baidu video.

| Parameter | EATH | | | EDMM | | | ERMH | | | EIIH | | |
|------------------------------------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|
| | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> |
| $\beta_{21}(A_v \rightarrow C_b)$ | | | | .02 | .06 | .28 | | | | | | |
| $\beta_{31}(A_v \rightarrow SI)$ | .52 | .09 | 6.07 | .52 | .09 | 6.06 | .52 | .09 | 6.05 | .53 | .08 | 6.35 |
| $\beta_{41}(A_v \rightarrow A_b)$ | .34 | .08 | 4.25 | .34 | .08 | 4.25 | .12 | .17 | .72 | | | |
| $\beta_{51}(A_v \rightarrow PI)$ | | | | | | | | | | -.04 | .07 | .52 |
| $\beta_{42}(C_b \rightarrow A_b)$ | .27 | .10 | 2.82 | .27 | .10 | 2.80 | .27 | .10 | 2.77 | .28 | .10 | 2.77 |
| $B_{14}(A_b \rightarrow A_v)$ | | | | | | | .26 | .15 | 1.71 | | | |
| $\beta_{34}(A_b \rightarrow SI)$ | .19 | .07 | 2.59 | .19 | .07 | 2.58 | .18 | .07 | 2.45 | .24 | .07 | 3.44 |
| $\beta_{54}(A_b \rightarrow PI)$ | .68 | .08 | 7.96 | .68 | .08 | 7.97 | .67 | .08 | 7.97 | .68 | .08 | 8.07 |
| $\gamma_{11}(C_v \rightarrow A_v)$ | .52 | .11 | 4.97 | .52 | .11 | 4.98 | .52 | .10 | 5.22 | .54 | .11 | 5.06 |
| | $\chi^2=132.34, df=73, p=.00;$ | | | $\chi^2=132.21, df=72, p=.00;$ | | | $\chi^2=129.46, df=72, p=.00;$ | | | $\chi^2=147.28, df=73, p=.00;$ | | |
| | CFI=.97; RMSEA=.06; | | | CFI=.97; RMSEA=.06; | | | CFI=.97; RMSEA=.06; | | | CFI=.96; RMSEA=.07; | | |
| | GFI=.92; NFI=.94 | | | GFI=.92; NFI=.94 | | | GFI=.92; NFI=.94 | | | GFI=.91; NFI=.93 | | |

demonstrates that, when viewing the viral video, consumers focus their attention on the video content rather than the brand. The non-significant $A_v \rightarrow PI$ linkage indicates that people treat the video as interesting content rather than as an advertisement. In other words, psychologically, people separate video content from the product, and eventually viral video advertisement fails to function as a purchasing persuader. As a result, A_v fails to have a significant direct influence on PI. Generally, people are more focused on the story than on product information. As pointed out by MacKenzie, Lutz, and Belch (1986), “audience members respond less to the content of a persuasive message than to factors incidental to the content” (p 132). This situation therefore validates the affect transfer model.

The present research finds that the addition of the $A_v \rightarrow SI$ path significantly improves the overall model fit in all three experiments, which shows that a significant and large $A_v \rightarrow SI$ effect exists during VV advertising viewing. The importance of the $A_v \rightarrow SI$ path implies that viral video advertising environments can have a direct effect on intentions to pass along an advertisement when people like the content. By testing the extended model that includes the $A_v \rightarrow SI$ path, this research confirms the prediction that VV advertising viewing consists of both video sharing and brand information processing, as opposed to non-viral advertising, which only includes

brand information processing. Findings from this study also indicate that both processes in viral video advertising can be defined by the cognitive response model of cognitive response→attitude→behavior intention. The dual-behavior process, which has not been raised and discussed in previous studies, reveals critical differences between VV advertising and non-viral advertising.

The findings of this research further suggest that video sharing and brand information processing are interrelated. Besides the significance of the $A_v \rightarrow A_b$ linkage that reflects the effect of video sharing on information processing, we also find that information processing reciprocally affects video sharing. The results show that the overall model fit is further improved when the $A_b \rightarrow SI$ path is added into the extended model in all three experiments, which demonstrates that information processing will also affect the process of video sharing reciprocally. The existence of the $A_b \rightarrow SI$ path indicates that people's sharing intention may be enhanced or reduced when companies embed brand information into interesting video content. Therefore, knowing how and when to embed brand information into an interesting video is crucial and thus needs further research. Furthermore, it is obvious that A_b significantly affects not only PI, but also SI; therefore A_b is a critical variable for measuring the effectiveness of VV advertising.

Table 3
Structural estimates and goodness-of-fit indices: GM video.

| Parameter | EATH | | | EDMM | | | ERMH | | | EIIH | | |
|-----------------------------------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|--------------------------------|-----------|----------|
| | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> |
| $\beta_{21}(A_v \rightarrow C_b)$ | | | | .03 | .05 | .63 | | | | | | |
| $\beta_{31}(A_v \rightarrow SI)$ | .49 | .08 | 6.46 | .49 | .08 | 6.46 | .49 | .08 | 6.46 | .52 | .08 | 6.84 |
| $\beta_{41}(A_v \rightarrow A_b)$ | .35 | .08 | 4.57 | .34 | .08 | 4.57 | .39 | .13 | 3.05 | | | |
| $\beta_{51}(A_v \rightarrow PI)$ | | | | | | | | | | -.02 | .06 | .37 |
| $\beta_{42}(C_b \rightarrow A_b)$ | .33 | .11 | 3.04 | .33 | .11 | 3.00 | .33 | .11 | 3.02 | .35 | .11 | 3.08 |
| $B_{14}(A_b \rightarrow A_v)$ | | | | | | | -.05 | .13 | .41 | | | |
| $\beta_{34}(A_b \rightarrow SI)$ | .34 | .07 | 4.87 | .33 | .07 | 4.85 | .34 | .07 | 4.89 | .38 | .07 | 5.57 |
| $\beta_{54}(A_b \rightarrow PI)$ | .73 | .07 | 10.53 | .73 | .07 | 10.57 | .73 | .07 | 10.52 | .74 | .07 | 10.67 |
| $\gamma_1 I(C_v \rightarrow A_v)$ | .61 | .08 | 7.22 | .61 | .08 | 7.23 | .62 | .09 | 6.90 | .61 | .08 | 7.21 |
| | $\chi^2=106.90, df=72, p=.00;$ | | | $\chi^2=107.15, df=73, p=.00;$ | | | $\chi^2=107.00, df=72, p=.00;$ | | | $\chi^2=126.80, df=73, p=.00;$ | | |
| | CFI=.99; RMSEA=.05; | | | CFI=.99; RMSEA=.05; | | | CFI=.99; RMSEA=.05; | | | CFI=.98; RMSEA=.06; | | |
| | GFI=.93; NFI=.96 | | | GFI=.93; NFI=.96 | | | GFI=.93; NFI=.96 | | | GFI=.92; NFI=.95 | | |

Table 4
Structural estimates and goodness-of-fit indices: Nokia video.

| Parameter | EATH | | | EDMM | | | ERMH | | | EIIH | | |
|------------------------------------|---|-----|----------|---|-----|----------|---|-----|----------|---|-----|----------|
| | Coef. | SE | <i>T</i> | Coef. | SE | <i>t</i> | Coef. | SE | <i>t</i> | Coef. | SE | <i>t</i> |
| $\beta_{21}(A_v \rightarrow C_b)$ | | | | .00 | .05 | .00 | | | | | | |
| $\beta_{31}(A_v \rightarrow SI)$ | .53 | .10 | 5.48 | .53 | .10 | 5.48 | .53 | .10 | 5.48 | .54 | .10 | 5.60 |
| $\beta_{41}(A_v \rightarrow A_b)$ | .22 | .09 | 2.50 | .22 | .09 | 2.50 | .19 | .20 | .92 | . | | |
| $\beta_{51}(A_v \rightarrow PI)$ | | | | | | | | | | .01 | .08 | .11 |
| $\beta_{42}(C_b \rightarrow A_b)$ | .31 | .12 | 2.58 | .31 | .12 | 2.57 | .31 | .12 | 2.57 | .31 | .12 | 2.53 |
| $B_{14}(A_b \rightarrow A_v)$ | | | | | | | .04 | .20 | .21 | | | |
| $\beta_{34}(A_b \rightarrow SI)$ | .22 | .08 | 2.88 | .22 | .08 | 2.88 | .22 | .08 | 2.86 | .25 | .08 | 3.35 |
| $\beta_{54}(A_b \rightarrow PI)$ | .71 | .10 | 6.88 | .71 | .10 | 6.88 | .71 | .10 | 6.88 | .71 | .10 | 6.87 |
| $\gamma_{11}(C_v \rightarrow A_v)$ | .58 | .15 | 3.93 | .58 | .15 | 3.93 | .58 | .15 | 3.92 | .58 | .15 | 3.96 |
| | $\chi^2=94.44$, $df=73$, $p=.00$; CFI=.99; RMSEA=.04; GFI=.93; NFI=.94 | | | $\chi^2=94.44$, $df=72$, $p=.00$; CFI=.99; RMSEA=.04; GFI=.93; NFI=.94 | | | $\chi^2=94.52$, $df=72$, $p=.00$; CFI=.99; RMSEA=.04; GFI=.93; NFI=.94 | | | $\chi^2=99.59$, $df=73$, $p=.00$; CFI=.98; RMSEA=.05; GFI=.93; NFI=.93 | | |

Whether people are willing to share the VV advertising plays a critical role in its success. Our findings from this study suggest that there are three major sources of video-sharing intention, namely the direct impact of A_v , the direct impact of A_b , and indirect impact of A_v via A_b . The results demonstrate that in regard to SI, the aggregate — direct and indirect through A_b — influences of A_v are higher than that of A_b regarding SI. This means that the willingness to share video mostly comes from A_v , which also supports the argument that people's preference for the video will determine whether people will share it. Therefore, A_v is also a critical indicator of the success of VV advertising. A_v not only exerts influence on the intention of passing along a VV advertising, but also affects the product purchase intention through A_b . Therefore, A_v can integrate the two processes of video sharing and brand information processing as we predicted. In combination, our findings suggest that A_v and A_b are dual indicators of VV advertising effectiveness.

In summary, this study extends the mediation model of attitude toward advertising proposed by MacKenzie, Lutz, and Belch (1986) by incorporating SI into the model as a new variable to conceptualize and analyze the interaction between video sharing and brand information processing. The extended

model, when applied to the viral video advertising environment, has significant structural change compared with the original models. The extended affect transfer model, which is consistent across the three experiments, generally reflects the processes and features of VV advertising exposure.

Managerial Implications

Currently, the advertising environment has become increasingly interactive, and the mechanism and effects of VV advertising have become critical managerial issues. In this regard, this study makes the following contributions to the literature. First, it expands on established advertising models, and develops new models which are applicable to the new advertising environment and can be used as test models for VV advertising on social media. Second, the indirect path from A_v to PI suggests that VV advertising can exert a positive impact on consumers' purchase intention, and as a result managers should make efforts to foster positive attitudes toward VV advertisements in the mind of consumers. Moreover, managers need to be concerned not only about consumers' purchase intention, but also about their sharing intention as a result of the interactive advertising environment. This conclusion has

Table 5
Structural estimates and goodness-of-fit indices for extended common paths model.

| Parameter | Baidu video | | | GM video | | | Nokia video | | |
|------------------------------------|--|-----------|----------|---|-----------|----------|--|-----------|----------|
| | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> | <i>Coef.</i> | <i>SE</i> | <i>t</i> |
| $\beta_{21}(A_v \rightarrow C_b)$ | -.03 | .06 | .39 | .04 | .05 | .79 | -.01 | .06 | .11 |
| $\beta_{31}(A_v \rightarrow SI)$ | .52 | .09 | 6.00 | .49 | .08 | 6.40 | .53 | .10 | 5.48 |
| $\beta_{41}(A_v \rightarrow A_b)$ | .11 | .18 | .59 | .42 | .13 | 3.16 | .18 | .22 | .79 |
| $\beta_{51}(A_v \rightarrow PI)$ | -.07 | .08 | .87 | -.04 | .06 | .72 | -.01 | .08 | .12 |
| $\beta_{42}(C_b \rightarrow A_b)$ | .28 | .11 | 2.68 | .33 | .11 | 3.03 | .31 | .12 | 2.57 |
| $B_{14}(A_b \rightarrow A_v)$ | .28 | .16 | 1.71 | -.09 | .15 | .63 | .05 | .23 | .24 |
| $\beta_{34}(A_b \rightarrow SI)$ | .18 | .07 | 2.48 | .34 | .07 | 4.91 | .22 | .08 | 2.86 |
| $\beta_{54}(A_b \rightarrow PI)$ | .70 | .09 | 7.68 | .75 | .07 | 10.18 | .72 | .11 | 6.76 |
| $\gamma_{11}(C_v \rightarrow A_v)$ | .52 | .10 | 5.17 | .63 | .09 | 6.77 | .58 | .15 | 3.92 |
| | $\chi^2=129.13$, $df=70$, $p=.00$; CFI=.97; RMSEA=.06; GFI=.92; NFI=.94 | | | $\chi^2=106.02$, $df=70$, $p=.00$; CFI=.99; RMSEA=.05; GFI=.93; NFI=.96 | | | $\chi^2=94.54$, $df=70$, $p=.00$; CFI=.98; RMSEA=.04; GFI=.93; NFI=.94 | | |

important managerial implications for the conceptualization, production and distribution of advertisements. For example, when managers take audience's sharing intention into consideration, for production they will incorporate content that can increase consumers' sharing intention, and for distribution they will typically take advantage of not only traditional mass media but more importantly social media for better communication and advertising effects. Third, we show that the formation of attitudes in an interactive advertising environment follows the principles of affect transfer and peripheral persuasion, which differs from that within the traditional advertising environment. These findings should guide the production of advertisements and their distribution on social media.

Our study reveals that A_v not only directly impacts SI in the context of VV advertising viewing, but also impacts A_b and PI via peripheral persuasion and the affect transfer process. These bring about a series of tradeoffs when a company delivers a VV advertisement. First, "provocative" content may trigger higher SI, but it may also carry negative content that decreases PI. Therefore, a company taking advantage of VV advertising should consider how provocative the content should be. Second, certain socially inappropriate or unethical content may lead to higher SI (e.g., violence or nudity). In this context, managers must make a conscientious decision weighing the potential benefits of better reaching the audience versus the potential costs involved in distributing socially inappropriate or unethical content. Third, the content that consumers are willing to share does not always go along with what a brand stands for. For instance, sometimes consumers are more interested in sharing content depicting humor or violence, but content of this nature does not match a brand image that evokes steadiness or dependability. In that case, managers must find a balance between their brand image and the need to better reach potential consumers with content desirable for the target audience. Fourth, there may be a gap between consumers' higher SI and their PI, and managers need to strike a balance between those two elements. The above managerial implications not only highlight the advantages of VV advertising, but also expose its disadvantages, and managers need to be mindful of its potentially negative impact.

Our study also confirms that contrary to the field's common knowledge, attitude toward the featured brand in a video advertisement does play a role in viewers' intention to share a video. The implication is that managers need to reconsider the allocation of resources in the testing of a video advertisement before rolling it out. While a viewer tends to be more willing to forward a VV advertising when the video strikes a chord in him or her, findings from our study suggest that how the advertised brand is presented at the conclusion of the video would change viewer's attitudes toward the brand. This in turn might strengthen or weaken his/her intention to share the video with friends. Given the field's long held notion of how VV advertisements work, managerial attention is likely to weigh toward testing the effects of the video component in the pre-market stage to ensure a VV advertisement fulfills management's expectations. Based on our research findings, we recommend that managers grant value to the testing of the

brand part of a VV advertisement before launching a VV advertising campaign.

Limitations and Future Research

This research has certain limitations. First, the videos used in the experiments were limited in variety. Each of the viral videos, two humorous and one emotional, was selected from a Chinese video-sharing Web site based on number of views. However, viral videos have other content elements such as violence and sex appeal, and this research does not cover all content categories of viral video advertising. Also, this study only selected and examined video advertisements known to be viral. In those regards, the videos used in the experiments did not constitute a representative, unbiased sample, which lessens the validity of this research. Future research should look into videos featuring other content categories as well as those not known to be viral.

Second, the participants in this experimental study were college students aged between 18 and 21. Although young adults within this age range are generally the most active video sharers, those in other age groups are also involved but are not represented in the study. Therefore, the results of this study are not generalizable beyond the specific age group under examination. Future research should adopt a more representative sample to rectify this issue.

Third, there may exist other moderators that regulate the effectiveness of viral video advertising, such as need for cognition, motivations, and personality. These moderators, which may impact people's sharing intention and the persuasive effect of advertising, are not discussed in this research. Future research should examine a greater variety of moderators.

Fourth, the three videos used in this study involve different product categories and different levels of product involvement, but those two variables were not included in the study for between-group comparison. Future research should investigate the mechanism and effect of VV advertising in the context of different product categories and different product involvement levels.

Fifth, this study does not examine social and interpersonal factors that play important roles in the environment of interactive media. These factors and their impact on viral video advertising should be investigated in future research. Furthermore, in this research we classified audience opinions into just three categories: positive, neutral, or negative. Future research needs to develop more precise measurements to better analyze responses to VV advertising. Finally, future research should further look into potential negative impact of VV advertising on brand image and purchase intention.

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