Journal of Advertising, 43(1), 100–114

ISSN: 0091-3367 print / 1557-7805 online
DOI: 10.1080/00913367.2013.811707

Routledge
Taylor & Francis Group

The Influence of Sender Trust and Advertiser Trust on Multistage Effects of Viral Advertising

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A viral advertising message has two different sources: the advertiser as the message creator and a sender as the message distributor. This study examined the influence of sender trust and advertiser trust on four stages of viral advertising effects. Results from a field experiment demonstrated that sender trust and advertiser trust have differential influences on effect stages. Significant interaction effects show that if a viral ad is sent by a trusted sender, the influence of advertiser trust becomes non-significant or reduced, suggesting that a viral ad from a trusted sender can overcome the handicap a less trusted advertiser might have.

In the interactive media environment, consumers not only have more control over when and how they are exposed to and process advertising messages but also actively generate and spread marketplace information. Advertising scholars and practitioners have begun to explore how to use these expanded channels of consumer interactions for marketing communication purposes. Indeed, "viral advertising," "viral marketing," "buzz marketing," or "word-of-mouth (WOM) advertising" have become the focal point of many articles published in trade and academic journals (e.g., Jurvetson 2000; Leskovec, Adamic, and Huberman 2007; Montgomery 2001; Porter and Golan 2006).

Viral advertising refers to marketer-initiated electronic-WOM (eWOM) strategies that use specially crafted messages designed to be passed along or spread by consumers (Porter and Golan 2006). The viral metaphor well captures how a viral advertising message diffuses. Like a flu virus or computer virus, viral advertising messages diffuse through human networks spread by interpersonal contact. According to PQ Media, spending on marketing activities generating WOM in the United States was estimated at $1.54 billion in 2008 and expected to grow to an annual growth rate of 14.5% until 2013 (eMarketer 2009).

Despite the growing interest in viral advertising among advertising scholars and practitioners, academic research on viral advertising is still at a very early stage. The few prior studies on viral advertising have focused mostly on diffusion of messages and factors influencing the diffusion process (Chiu et al. 2007; Phelps et al. 2004; Porter and Golan 2006). Theoretical studies regarding the effect of the components of a viral ad on ultimate ad outcomes are lacking.

To fill this void in the literature, this study examines source trust as a key factor influencing viral ad outcomes. Source trust is a particularly important factor in explaining viral advertising effects, because viral ad messages have elements of both media advertising and interpersonal communication, which differ greatly in regard to trust (Nan and Faber 2004). The advertiser is the original source of an ad message, and advertisements are usually viewed skeptically because their intention is to persuade consumers to buy a product (Calfee and Ringold 1994). However, viral messages are passed on from friends or family members who are seen to have the consumers' best interests at heart. This unique combination should, therefore, make source trust a particularly interesting and important factor in determining viral advertising effects.

Previous studies have identified multiple stages consumers must go through before a viral ad message can affect their brand attitudes (De Bruyn and Lilien 2008; Phelps et al. 2004). Thus, to fully understand the influence of source trust, it is necessary to consider its role at different stages in the transfer of viral ads. As a result, the present study attempts to elaborate on the role of source trust in viral advertising and to determine how its components influence various stages in the viral advertising process, including (1) attention to the viral ad e-mail, (2) preexposure ad perceptions, (3) voluntary exposure to the e-mail, and (4) attitude change.

To illustrate the phenomenon and key concepts this study investigates, imagine that you have received an e-mail from

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a close friend who has forwarded an ad he or she saw and thought might interest you (e.g., information on holiday gift ideas; a 20% discount coupon code for Godiva chocolates; or an entertaining viral video), with the e-mail subject line mentioning the advertiser's name (Godiva Chocolatier). In the "From:" line you will notice your friend's name; in the "Subject" line, the advertiser's name and the nature of the e-mail content. Based on just these two source cues, you will probably form some perceptions about this e-mail even before you open it. These preexposure perceptions will help determine the likelihood of your opening the e-mail. After opening the e-mail and viewing its content, you would likely form an attitude toward the e-mail message and also toward the featured brand.

Using this viral ad scenario, the present study conducted a field experiment to explore questions related to the intertwined influence of advertiser trust and sender trust on different stages of viral advertising effects. For example, are there differences in the ways in which sender trust and advertiser trust influence ad outcomes? How do the trust effects occurring at the previous stage influence later stages of effects? More interestingly, when a viral ad originates from a less trusted advertiser (e.g., an advertiser with a poor reputation), can the ad recipient's high level of trust in the sender overcome the possible effects of the low level of advertiser trust? Since viral ads can be either informational or entertaining, this study employed both information and entertainment viral ads to test if the effects of sender and advertiser trust hold up similarly across the two types of viral ad messages. Figure 1 presents a roadmap of the key elements of this study and illustrates the four-stage model of viral ad outcomes.

LITERATURE REVIEW

Source Trust and Application to Viral Advertising

The construct of source trust is conceptually a little different from source credibility, which has been of great interest to

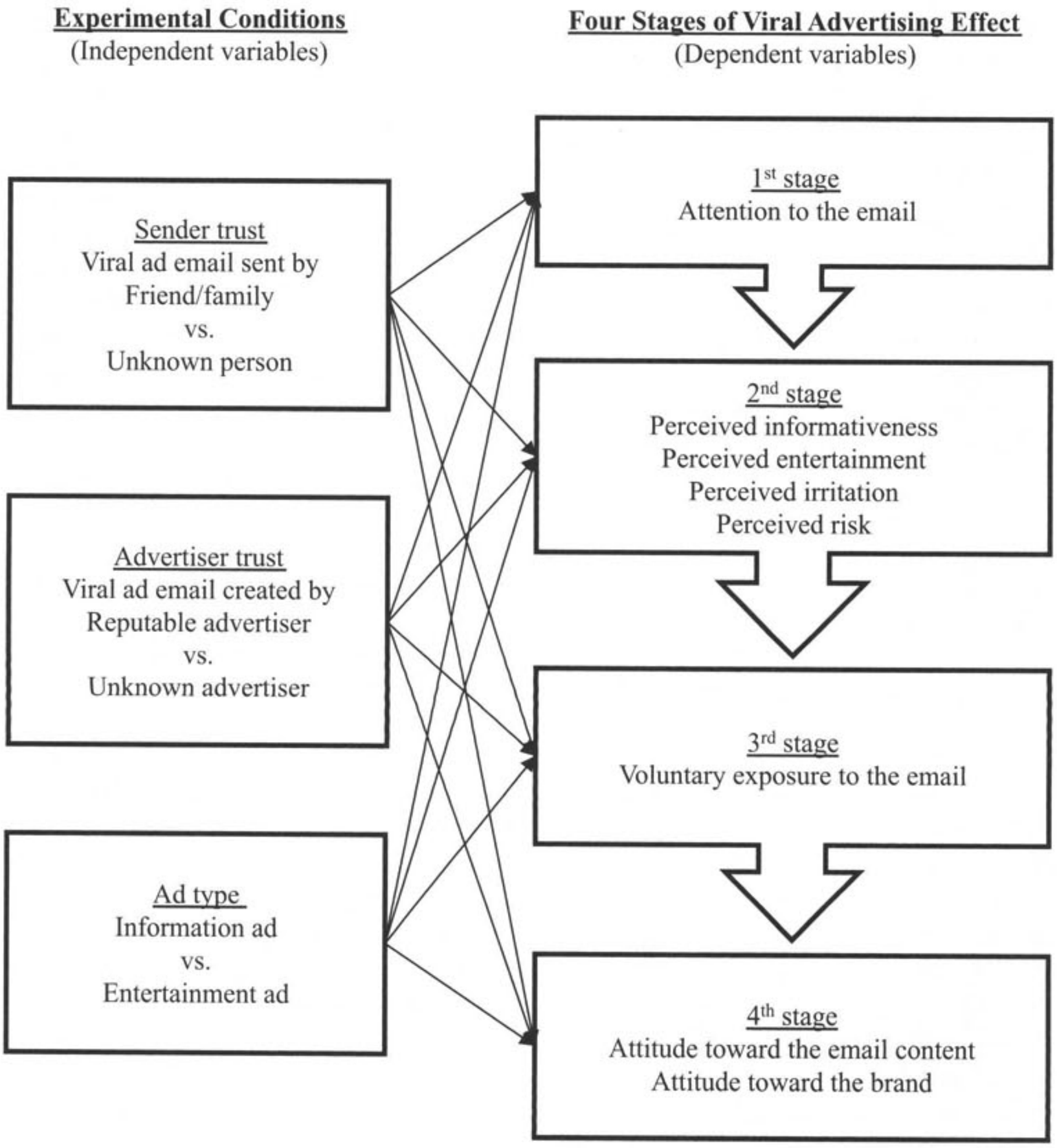

FIG. 1. Experimental conditions and outcome variables.

advertising scholars and practitioners. However, source trust may be a more useful construct when examining viral messages. Compared to advertising source credibility, source trust focuses more on relational characteristics involving two parties interacting or forming relationships (Huh and Shin 2012; Soh, Reid, and King 2009). Previous studies on viral advertising have suggested that relational characteristics between the sender and the recipient play an important role in explaining the effects of the sender on viral ad diffusion and persuasion (Chiu et al. 2007; De Bruyn and Lilien 2008; Huang, Lin, and Lin 2009). It was found that the closer the interpersonal relationship between the viral e-mail sender and the recipient, the more likely a viral e-mail is to be passed along (Chiu et al. 2007) and, as a result, the more likely to generate increased awareness of and interest in the viral content (De Bruyn and Lilien 2008). Given that the ways viral ads diffuse and exert influences resemble interpersonal communication among consumers, source trust would appear to be a better construct than advertising source credibility for examining and explaining the characteristics of a viral ad source. Research regarding brands, especially in the area of relationship marketing, is also finding that trust in a brand or advertiser is an extremely important concept in explaining consumer behavior (Chaudhuri and Holbrook 2001; Fournier 1998).

Viral ad source trust is conceptualized as a person's belief that the viral ad sender or the original ad creator (i.e., the advertiser) has attributes that are beneficial to him or her, such as benevolence, competence, and integrity, and the expectation of future behaviors of the source based on this belief (Doney and Cannon 1997; Larzelere and Huston 1980; Rempel, Holmes, and Zanna 1985). The distinction between trust for the viral ad sender and the advertiser is based on the framework of relational trust and calculative trust, which represent different relational characteristics between the trustor and the trustee (Lewicki and Bunker 1996; Rousseau et al. 1998; Williamson 1993). Relational trust between two parties stems from strong social ties. Relational trust develops from time spent together, intimacy, emotional intensity, and reciprocity (Granovetter 1973). This type of trust is based on a mutual understanding and sharing of each other's desires, values, and needs (Lewicki and Bunker 1996) and emotional bonds (McAllister 1995) created from long-term interactions and emotional investments between the two parties. Based on this relational ground, a person can believe that the other party sincerely cares about his or her welfare.

On the other hand, calculative trust can exist between two parties with weak or no ties. Calculative trust is based on the belief that the cost for the other party of violating trust will be greater than any benefit they would get and the belief that the other party recognizes this as well (Deutsch 1960). Thus, calculative trust explains why people trust another party even when they have different, sometimes conflicting, goals (Williamson 1993). In many social exchange situations, calculative trust is based on reputation (Dasgupta 1988; Doney and Cannon 1997; Williamson 1993). People tend to form trust in another person who is highly respected even when they do not know the person personally. This type of trust is based on the belief that the person would not violate trust because to do so would harm his or her reputation. In addition, the more resources a person spends to build a good reputation, the more likely people will trust the person, because the benefit of a one-time violation would likely be tiny as compared to the amount of resources spent to build the reputation.

The range and strength of the influence of trust is likely to differ between calculative and relational trust (Rousseau et al. 1998; Saparito, Chen, and Sapienza 2004). People with relational trust are likely to rely on the other party in a wide range of situations—even situations where they do not have any history of interactions and when uncertainty is high—because they believe in the other's altruistic motives. On the other hand, the range of calculative trust effects is likely to be limited to only the specific areas where prior history of interactions exists proving the trustee's capability and reliability. While people with relational trust would rely on one another with regard to emotional sharing and understanding, those with calculative trust would not be expected to genuinely care about one another's feelings.

Such trust distinction can be applied to explaining the differences between trust in the ad sender and the advertiser in the viral advertising context. When a person receives a viral ad e-mail from his or her friend, relational trust would most likely determine the trust between the sender and the recipient. Advertiser trust, on the other hand, can be explained by the principle of calculative trust, and the level of trust would be determined based on the strength of the advertiser's reputation. As a result, sender trust and advertiser trust would likely influence viral ad outcomes differently.

Multistage Effects of Viral Advertising

Viral advertising effects involve several sequential steps or stages. Consider what typically occurs when a viral advertising e-mail is received. First, it is delivered into a person's e-mail inbox. If the e-mail goes unnoticed by the recipient, it will not generate any effects. If it is noticed, however, the receiver will form perceptions about the viral ad e-mail prior to opening it. For example, you may perceive the message to be beneficial (e.g., informative, entertaining) or possibly harmful (e.g., spam, a virus). Then, based on these perceptions, you may or may not open the ad message. Finally, if you open the e-mail, will you be exposed to the e-mail message and perhaps a link to a target ad. At this stage, you will form an attitude toward the e-mail content, and this may affect your attitude toward the brand.

This scenario suggests that viral advertising effects occur through multiple stages: (1) attention to the e-mail; (2) perceptions of a viral advertising message prior to opening it; (3) voluntary exposure to the e-mail; and (4) attitudinal outcomes. The multistage effect model of viral advertising indicates that the final outcome of viral advertising (attitude formation or change)

is conditional on the outcomes of previous stages, and different influencing factors may operate at different stages.

Among these four stages, the first stage (attention to the e-mail) and the third stage (voluntary exposure to the e-mail) play a role as filtering stages to the next stage of ad perceptions and attitude formation. Specifically, only the recipients who noticed the e-mail at the first stage would form the ad perceptions at the second stage, and only the recipients who opened the e-mail at the third stage would be exposed to the viral e-mail and further form an attitude toward the e-mail content and an attitude toward the brand at the fourth stage.

Preexposure perceptions at the second stage can be further divided into multiple dimensions. A review of the existing literature on perceptions of ads and online messages revealed four preexposure ad perceptions: informativeness, entertainment, irritation, and risk. Among these dimensions, informativeness, entertainment, and irritation have been consistently identified as major ad perceptions across different media (Aaker and Stayman 1990; Chen and Wells 1999; Ducoffe 1996; MacKenzie and Lutz 1989). Informativeness refers to the extent to which consumers perceive an ad to provide useful and relevant information to them. Entertainment refers to the extent to which an ad is enjoyable and entertaining. Irritation refers to the extent of displeasure an ad causes by distracting attention and increasing anxiety (Bauer and Greyser 1968; Ducoffe 1996).

Along with these three perceptual dimensions of advertising messages, perceived risk is another important perceptual response consumers can have when they encounter viral ad e-mails. Consumers perceive risk when they face uncertainty and potentially undesirable consequences as a result of an activity (Grazioli and Jarvenpaa 2000; Jarvenpaa and Tractinsky 1999). Viral advertising e-mails can be perceived as riskier than any other forms of advertising, because actively viewing a viral message can make the ad recipients susceptible to computer viruses, fraud, phishing scams, and privacy invasion. It is expected that viral ad recipients would form perceptions of all four dimensions (informativeness, entertainment, irritation, and risk) prior to opening a viral ad e-mail.

Last, at the fourth stage where attitude formation or change occurs, it is expected that attitude toward the e-mail content would play a role in influencing attitude toward the brand. Previous studies have demonstrated that the affective response toward an ad would likely transfer to attitude toward the brand and influence the acceptance of the ad message (Brown and Stayman 1992; MacKenzie, Lutz, and Belch 1986). In the viral advertising context, attitude toward the brand would likely be influenced by two different messages: (1) the e-mail content (i.e., the e-mail message written by the ad sender and the link to the ad forwarded by the sender) and (2) the target ad. This study particularly focuses on attitude toward the e-mail content and its influence on attitude toward the brand, because the e-mail content, not the target ad, contains the sender's message of the endorsement of the ad, and thus the influence of sender trust on attitude toward the brand would likely operate through attitude toward the e-mail content.

HYPOTHESES

Influence of Sender Trust on the Four Stages of Viral Advertising Effects

If a viral ad e-mail is sent by a friend or family member with whom the recipient has relational trust, the recipient would likely believe that the sender understands his or her values and needs and cares about his or her welfare. Thus the recipient would expect the ad sender to provide useful information if needed, care about the recipient's feelings, and cause no harm. Thus, a viral ad e-mail from a friend or family member would be perceived to be more informative, more entertaining, less irritating, and less risky. Furthermore, the recipient would likely be intrinsically interested in the sender and would therefore be likely to notice and open the viral ad e-mail. Also, the recipient would likely feel emotional responses toward the sender, and the feelings would likely transfer to attitude toward the e-mail and the advertised brand (Edell and Burke 1987; Yi 1990). On the other hand, if a viral ad e-mail is sent by an unknown person (i.e., a less trusted sender), the ad recipient would less likely experience these responses. Thus, the following hypothesis is posed:

> **H1:** A viral ad e-mail sent by a trusted sender (i.e., friend or family member), as compared to a viral ad e-mail sent by a less trusted sender (i.e., unknown other), will (a) be more likely to be noticed; (b) be perceived as more informative, more entertaining, less irritating, and less risky; (c) be more likely to be opened; and (d) generate more favorable attitude toward the e-mail content and the advertised brand.

Influence of Advertiser Trust on the Four Stages of Viral Advertising Effects

If a viral ad e-mail features an advertiser with high reputation, the ad recipient would likely believe that the advertiser would have high expertise on the product category and would not engage in any opportunistic behaviors to consumers. Thus, a viral ad e-mail featuring a trusted advertiser would likely be perceived to be more informative and less risky. Because the ad recipient has these favorable perceptions in the viral ad e-mail, he or she would more likely open the e-mail. However, the effect of advertiser trust, which is calculative trust, would likely be limited to the domains where the advertiser has already demonstrated (or is supposed to have) its expertise and reliability to its consumers (Rousseau et al. 1998). The ad recipient would not expect even a trusted advertiser to genuinely care about consumers' feelings and to share emotions and, thus, advertiser trust would not influence perceived entertainment and perceived irritation. In addition, because of the advertiser's high reputation, the e-mail featuring a trusted advertiser would more likely be noticed and the viral ad e-mail and the advertised brand would

likely be more positively evaluated (Goldsmith, Lafferty, and Newell 2000; MacKenzie and Lutz 1989). On the other hand, if the same e-mail is from a less trusted advertiser (i.e., unknown advertiser), these outcomes would not occur. Thus, we predict:

> **H2:** A viral ad e-mail featuring a trusted advertiser (i.e., advertiser with high reputation), as compared to a viral ad e-mail featuring a less trusted advertiser (i.e., unknown advertiser), will (a) be more likely to be noticed; (b) be perceived as more informative and less risky; (c) be more likely to be opened; and (d) generate more favorable attitude toward the e-mail content and the advertised brand.

Interaction of Sender Trust and Advertiser Trust

In addition to the main effects, interaction hypotheses are posed on four effect stages of viral advertising. It is expected that, when a viral ad e-mail is sent by a trusted sender, the influence of advertiser trust would be smaller. People tend to rely on their friends or family members in making decisions and evaluating objects, even when other situational factors are uncertain and risky (Rousseau et al. 1998), because they would likely believe their friends and family members understand their needs and goals and sincerely care about their well-being. Thus, when sender trust is high, the effect of advertiser trust would not be likely to matter much. However, when a viral ad e-mail is sent by an unknown sender, the recipient's responses to the viral ad e-mail would be more based on other cues, such as the advertiser's reputation. Therefore, the following hypothesis is posed:

> **H3:** The difference between a viral ad e-mail featuring a trusted advertiser and an e-mail featuring a less trusted advertiser in (a) attention to the e-mail, (b) preexposure ad perceptions, (c) the likelihood of opening the e-mail, and (d) attitude toward the e-mail content and attitude toward the advertised brand will be smaller when the e-mail is sent by a trusted sender than when the e-mail is sent by a less trusted sender.

Mediation of Prior-Stage Effects on Later-Stage Effects

As consumers go through the four effect stages, the influence of sender and advertiser trust on different viral advertising effects is likely to be mediated by earlier-stage effects. For example, preexposure ad perceptions are expected to mediate the relationship between viral ad sender/advertiser trust and voluntary exposure to the viral ad e-mail by opening it. If a close friend or family member sends a viral ad e-mail, the ad recipient would more likely open it because the recipient would trust the sender and likely be intrinsically interested in maintaining the relationship with the sender, as well as because the e-mail would be perceived as beneficial. Thus, sender trust is predicted to exert both a direct and an indirect influence (through preexposure ad perceptions) on voluntary exposure to the e-mail. Likewise, the influence of advertiser trust on voluntary exposure to the e-mail would likely be mediated by preexposure perceptions. Thus, we hypothesize:

> **H4:** The influence of sender trust and advertiser trust on voluntary exposure to the e-mail would be significantly mediated by preexposure perceptions.

Last, we predict that the influence of sender trust on attitude toward the brand would be mediated by attitude toward the e-mail content, because the e-mail content from a close friend or family member would generate a positive affective response toward the message and the affect would transfer to the brand. Although the hypothesized direct influence of advertiser trust on attitude toward the brand is likely to remain, as consumers tend to use advertiser reputation to judge a brand (Goldsmith, Lafferty, and Newell 2000), some level of mediation by attitude toward the e-mail content is also expected. Thus, the following hypothesis is posed:

> **H5:** The influence of sender trust and advertiser trust on attitude toward the brand would be significantly mediated by attitude toward the e-mail content.

METHODS

We conducted a field experiment where the experimental manipulation occurred in a real-life situation using a between-subjects experimental design. The subjects were randomly assigned to one of eight conditions in a $2 \times 2 \times 2$ factorial design: two sender trust conditions (trusted versus less trusted sender) $\times$ two advertiser trust conditions (trusted versus less trusted advertiser) $\times$ two ad type conditions (a utilitarian information ad versus a hedonic entertainment ad).

Ad type was included as a design element to check robustness of the effects of the two key independent variables (sender trust and advertiser trust). Viral advertising is typically categorized into one of two types based on the values the ad offers: either utilitarian value or hedonic value (Chiu et al. 2007). It is possible that these two different ad types influence ad outcomes in different ways. However, because previous research has not looked at both types of ads in the same study, no formal hypotheses are posed for this factor.

Manipulation of Independent Variables

Tax preparation service was selected for the product category in this study for two reasons. First, previous literature has suggested that WOM is more influential on a service purchase decision than on a product purchase decision (Murray 1991). Second, the ad agency working for H&R Block, the tax preparation service company, gave us permission to use and modify viral ads they created for this client, thus allowing us to use professionally prepared ads. To manipulate the level of advertiser trust, H&R Block was chosen as a trusted advertiser and a fictitious tax preparation service, RefundWow, was created as a less trusted advertiser.

As experimental stimuli, this study used two types of viral advertising: an information ad and an entertainment ad. Tax tip information web pages from the official H&R Block website were used as the information ad from the trusted advertiser. For the less trusted advertiser condition, a fictitious website for RefundWow (www.refundwow.com) was created. This website

included the same tax tip information web pages that appeared on the H&R Block website. For the entertainment viral ad stimuli, three existing viral videos were selected from H&R Block's actual viral ad campaign. Each video showed one person dreaming about what he or she wanted to do with a tax refund. To manipulate the advertiser trust conditions, these videos were modified by inserting either the H&R Block or RefundWow brand name and logo at the beginning and the end of the videos. These videos were posted on YouTube.

To manipulate the level of sender trust, subjects in the highly trusted sender condition received a viral ad e-mail sent by an actual friend or family member. The subjects in the less trusted sender condition received a viral ad e-mail sent by an unknown person.

A lab pilot test was conducted to ensure that the high and low trust conditions for both advertiser and sender trust were perceived to differ significantly. Perceived sender trust and advertiser trust were each measured by a modified trust scale developed by McKnight, Choudhury, and Kacmar (2002) (see appendix). The pilot test results showed a significant difference in perceived trust between the two advertiser trust conditions ($M_{\text{H\&RBlock}} = 3.86$; $M_{\text{RefundWow}} = 3.29$; $F\ (1, 121) = 5.43$; $p = .02$) and between the two sender trust conditions ($M_{\text{close friend}} = 5.29$; $M_{\text{unknown other}} = 2.92$; $F\ (1, 119) = 116.80$, $p < .01$), indicating successful manipulation.

Data Collection Procedure

To recruit study subjects, snowball sampling was used. First, 130 students were recruited at a large Midwestern university in exchange for extra course credit. Each student was asked to provide names, mailing addresses, and e-mail addresses of four close friends or family members with whom they frequently communicate via e-mail. The list of friends and family members collected through this process served as this study's sample. From this procedure, contact information for 515 subjects was collected.

An initial study invitation letter was mailed to all the sample members, following the institutional review board guidelines, under the disguised title and description of an online survey on consumers' product-related information search on the Internet. The letter informed the subjects that they would receive an e-mail from the researcher with a consent form on a particular date and asked them to reply to the e-mail indicating if they were willing to participate in the study. Also, the letter stated that they would receive a $2 bill as compensation for their participation. A total of 244 subjects agreed to participate in the study.

The subjects were randomly assigned to one of the eight experimental groups. Subjects who were assigned to the low sender trust condition received a viral ad e-mail sent by the researcher using a Gmail account under the name of Julie Bates. Subjects in the trusted sender condition received a viral ad e-mail from an actual close friend or family member (the student who provided the individual's name and contact information). Five students failed to send the assigned e-mail to subjects as instructed and thus their friends or family members were removed from the sample. As a result, a total of 239 people remained in the study sample and received the viral ad e-mail stimulus.

One day after the viral ad e-mail was sent, an online survey invitation e-mail was sent from the researcher to all subjects via e-mail. Up to three follow-up contacts were made if necessary. A total of 216 questionnaires were collected; 12 questionnaires with several unanswered questions were removed, leaving 204 usable questionnaires. Upon completion, a debriefing letter along with a $2 bill as compensation for participation was sent to all the participating subjects at their mailing address.

Measurements

The online questionnaire included the measures of perceived sender trust, perceived advertiser trust, the dependent variables (attention to the e-mail, preexposure perceptions, voluntary exposure to the e-mail, attitude toward the e-mail content, and attitude toward the brand), and covariates such as involvement, Internet use motivation, Internet use hours, perceived computer skill, perceived Internet skill, dispositional trust, institutional trust in the Internet, attitude toward spam mails, and demographics.

The questionnaire started with the following general instruction: "The following questions are about an e-mail you recently received from one of your friends or family members (or Julie Bates), which contained a message about a tax preparation service. The title of the e-mail was funny video (or useful tax tip) from H&R block (or RefundWow)." Attention to the e-mail was measured by a recall question asking "Do you remember receiving this e-mail?" Subjects who responded yes were directed to proceed to the next set of questions. Subjects who said no were directed to skip to the covariate questions. Preexposure ad perceptions were measured based on the subjects' retrospective memory of their perception at the moment when they first saw the e-mail. The ad perception measurements included perceived informativeness, entertainment, irritation, and risk. Voluntary exposure to the e-mail was measured by asking a yes or no question: "Did you open and read the e-mail?" Then, attitude toward the e-mail content and attitude toward the brand were measured. Detailed information about the key measures is presented in the appendix.

RESULTS

Randomization and Manipulation Checking

As mentioned earlier, among the 239 subjects who initially agreed to participate in the study, 204 fully completed the online questionnaire. A series of chi-square tests demonstrated that the dropout rates did not significantly differ by sender trust ($\chi^2 = .00$, $df = 1$, $p = .99$), advertiser trust ($\chi^2 = .89$, $df = 1$, $p = .70$), or ad type conditions ($\chi^2 = 1.08$, $df = 1$, $p = .39$). Additional tests showed that none of the background variables measured as covariates was significantly different across the

TABLE 1
Attention to the E-mail Across Experimental Conditions ($N = 204$)

	High ST ($n = 95$)		Low ST ($n = 109$)	
	High AT	Low AT	High AT	Low AT
Information ad	96.0% (24)	90.9% (20)	81.5% (22)	64.3% (18)
Entertainment ad	96.3% (26)	81.0% (17)	76.9% (20)	53.6% (15)
Combined % within trust group	96.2% (50)	86.0% (37)	79.2% (42)	58.9% (33)

Note. ST = sender trust; AT = advertiser trust; numbers in parentheses indicate the number of subjects.

experimental conditions. Thus, the results confirm that there were no significant confounding factors.

Manipulation checks were conducted through a series of ANOVAs. The difference in perceived sender trust scores between the high and low sender trust conditions ($M_{\text{high sender trust}} = 5.92$, $M_{\text{low sender trust}} = 2.90$, F (1, 159) = 230.76, $p < .01$) and the difference in perceived advertiser trust scores between the high and low advertiser trust conditions was statistically significant ($M_{\text{high advertiser trust}} = 4.71$, $M_{\text{low advertiser trust}} = 3.28$, F (1, 159) = 54.57, $p < .01$). Thus all of the manipulations were deemed successful.

Hypotheses Testing

Before proceeding, it is important to note that the sample size differs for testing the various hypotheses depending upon the viral ad effect stages at which it is being tested. Among the four sequential stages, attention to the e-mail and voluntary exposure to the e-mail serve as a filter to the subsequent effect stage, because only those who engaged in the prior stage can proceed to the next stage. Thus, as we tested the hypotheses at each stage, the sample size was reduced by those not moving on from the previous stage. The hypotheses for attention to the e-mail were tested with the total sample of 204 subjects. Preexposure ad perceptions and voluntary exposure were tested using a reduced sample of only the 162 subjects who remembered receiving the e-mail. Finally, the tests of source effects on attitudes were conducted on the 102 subjects who voluntarily opened the e-mail.

Effects on attention to the e-mail. About 79% of the 204 participants reported noticing the viral ad e-mail (see Table 1). We hypothesized that a viral ad e-mail sent by a trusted sender (hypothesis 1a) and featuring a trusted advertiser (hypothesis 2a) would be more likely to be noticed than an e-mail sent by a less trusted sender or featuring a less trusted advertiser. An interaction between sender trust and advertiser trust was also predicted (hypothesis 3a). To test these hypotheses concurrently, the three independent variables were each entered into a logistic regression analysis. The three two-way interaction terms (sender trust × advertiser trust; sender trust × ad type; and advertiser trust × ad type) and the three-way interaction term (sender trust × advertiser trust × ad type) were also entered.

The results presented in Table 2 demonstrate that sender trust exerted a positive influence on attention to the e-mail ($p = .04$), while the influence of advertiser trust ($p = .16$) and the interaction effect (sender trust × advertiser trust) ($p = .99$) were not significant. Thus, hypothesis 1a predicting the effect of sender trust on attention to the e-mail was supported, while hypothesis 2a predicting the effect of advertiser trust and hypothesis 3a predicting the interaction effect were not supported.

Effects on preexposure ad perceptions. At the second effect stage, it was predicted that a viral ad e-mail sent by a trusted sender (hypothesis 1b) and featuring a trusted advertiser (hypothesis 2b) would be perceived more positively than an e-mail sent by a less trusted sender or featuring a less trusted advertiser. An interaction between sender trust and advertiser trust was also predicted (hypothesis 3b). Table 3 shows the descriptive statistics of four preexposure ad perceptions across the eight experimental conditions.

Four separate three-way ANOVAs were conducted to compare each of the preexposure ad perception scores, with sender trust, advertiser trust, ad type, and interaction terms as independent variables. As presented in Table 4, the ANOVA results show that after controlling for the effects of ad type, sender trust significantly influenced all four types of preexposure ad perceptions, whereas advertiser trust significantly influenced only perceived informativeness and perceived risk. Thus, hypothesis 1b predicting the influence of sender trust on all four ad perceptions and hypothesis 2b predicting the influence of

TABLE 2
Logistic Regression Predicting Attention to the E-mail ($N = 204$)

	B	p
Sender trust	1.715	.041
Advertiser trust	.894	.158
Ad type	−.445	.416
ST × AT	−.018	.990
ST × ad type	−.411	.703
AT × ad type	.167	.848
ST × AT × ad type	.769	.689
−2 log likelihood = 179.943, $df = 7$, $\chi^2 = 27.505$, $p < .001$		

Note. ST = sender trust; AT = advertiser trust.

TABLE 3
Preexposure Ad Perceptions ($N = 162$)

	Information ad				Entertainment ad			
	High ST		Low ST		High ST		Low ST	
	High AT ($n = 24$)	Low AT ($n = 20$)	High AT ($n = 22$)	Low AT ($n = 18$)	High AT ($n = 26$)	Low AT ($n = 17$)	High AT ($n = 20$)	Low AT ($n = 15$)
Informativeness	5.26 (1.08)	4.55 (1.62)	3.45 (1.92)	2.67 (1.59)	2.89 (1.65)	2.01 (1.23)	2.95 (1.84)	2.30 (1.26)
Entertainment	3.29 (1.27)	3.27 (1.89)	2.42 (1.00)	1.59 (.84)	5.05 (1.18)	5.56 (1.42)	4.55 (1.56)	3.18 (1.88)
Irritation	3.36 (1.26)	2.61 (1.30)	3.72 (1.42)	4.06 (1.62)	2.73 (.94)	2.89 (1.27)	3.75 (1.18)	4.28 (1.32)
Risk	2.28 (.76)	3.43 (1.20)	4.64 (1.29)	5.61 (1.21)	3.04 (1.29)	3.43 (1.50)	5.37 (1.20)	5.61 (1.21)

Note. ST = sender trust; AT = advertiser trust; numbers in parentheses indicate standard deviation.

advertiser trust on perceived informativeness and perceived risk were supported.

In addition, a significant interaction effect was found only for perceived entertainment. The results of split-sample t tests demonstrate that the pattern of the interaction effect was consistent with hypothesis 3b (see Figure 2). When the e-mail was sent by a trusted sender, the effect of advertiser trust was not significant ($M_{\text{high sender trust} \times \text{high advertiser trust}} = 4.21$, $M_{\text{high sender trust} \times \text{low advertiser trust}} = 4.32$, $t = -.31$, $p = .76$). However, when the e-mail was sent by a less trusted sender, the effect of advertiser trust on perceived entertainment was significant ($M_{\text{low sender trust} \times \text{high advertiser trust}} = 3.44$, $M_{\text{low sender trust} \times \text{low advertiser trust}} = 2.31$, $t = 2.94$, $p < .01$). It should be pointed out that while an e-mail sent by an unknown sender was seen as more entertaining if it was from a more trusted advertiser, this did not reach the perceived entertainment level attained by any e-mail from a trusted sender ($M_{\text{high sender trust}} = 4.26$, $M_{\text{low sender trust} \times \text{high advertiser trust}} = 3.44$, $t = 2.54$, $p < .01$). Thus, hypothesis 3b predicting the interaction effect was partially supported only for perceived entertainment.

In addition, two main effects of ad type and one interaction effect related to the ad type were found significant. Not surprisingly, we found that the information ad was seen as significantly more informative and the entertaining ad was perceived as more entertaining. More unexpectedly, we also found a significant sender trust by ad type interaction on perceived informativeness.

Effects on voluntary exposure. Among the subjects who noticed the viral ad e-mail, some opened the e-mail message (voluntary exposure) while others did not. The descriptive statistics of voluntary exposure across experimental conditions are presented in Table 5.

Hypothesis 1c, hypothesis 2c, and hypothesis 3c predicted main and interaction effects of sender trust and advertiser trust on voluntary exposure. To concurrently test these hypotheses, a hierarchical logistic regression was conducted with voluntary exposure to the e-mail as the dependent variable. Sender trust, advertiser trust, ad type, and three two-way interaction terms were entered in the first block; four preexposure ad perceptions were entered in the second block. The three-way interaction term was not included in this analysis because we found in initial analysis that when the three-way interaction term was entered in the analysis, the standard errors of two predictors, sender trust × ad type and the three-way interaction term, were inflated, causing unreliable estimation of inferential statistics. This was because all the subjects in the condition involving high

TABLE 4
Three-Way ANOVA Tests of Preexposure Ad Perceptions ($N = 162$)

	Informativeness		Entertainment		Irritation		Risk	
	F	p	F	p	F	p	F	p
Sender trust	11.264	.001	37.073	.000	26.631	.000	118.261	.000
Advertiser trust	9.212	.003	3.678	.057	.125	.724	7.497	.007
Ad type	33.486	.000	75.858	.000	.019	.891	1.167	.282
ST × AT	.023	.879	9.128	.003	3.185	.076	.027	.870
ST × ad type	16.322	.000	.154	.695	.512	.475	.307	.581
AT × ad type	.001	.975	.000	.998	1.836	.177	1.809	.181
ST× AT × ad type	.095	.759	1.473	.227	.789	.376	.653	.420

Note. ST = sender trust; AT = advertiser trust.

TABLE 5
Percentages of Voluntary Exposure Across Experimental Conditions ($N = 161$)

	High ST ($n = 86$)		Low ST ($n = 75$)	
	High AT	Low AT	High AT	Low AT
Information ad	70.8% (17)	75.0% (15)	50.0% (11)	33.3% (6)
Entertainment ad	80.8% (21)	100% (16)	60.0% (12)	26.7% (4)
Combined % within trust group	76.0% (38)	86.1% (31)	54.8% (23)	30.3% (10)

Note. ST = sender trust; AT = advertiser trust; numbers in parentheses indicate the number of the subjects who opened the e-mail. $N = 161$ due to one missing response.

sender trust, low advertiser trust, and entertaining ad responded positively on voluntary exposure. The results of the hierarchical logistic regression analysis are presented in Table 6.

The results demonstrate that sender trust ($p < .01$) and sender trust × advertiser trust ($p = .02$) significantly influenced voluntary exposure (Model 1). The influence of advertiser trust on voluntary exposure did not reach statistical significance ($p = .06$). Thus hypothesis 1c predicting the effect of sender trust and hypothesis 3c predicting the interaction effect were supported, while hypothesis 2c predicting the effect of advertiser trust was not supported.

Hypothesis 4 predicted that preexposure ad perceptions would mediate the effects of sender trust and advertiser trust on voluntary exposure to the e-mail. This hypothesis was supported using Baron and Kenny's (1986) mediation analysis approach: (1) sender trust was found to significantly influence voluntary exposure ($p < .01$) (see Table 6); (2) sender trust significantly predicted perceived entertainment ($p = .03$) and perceived risk ($p = .03$); (3) these mediator variables significantly influenced voluntary exposure; and (4) the influence of sender trust on voluntary exposure became nonsignificant ($p = .17$) after preexposure ad perceptions variables were entered into the regression. The results suggest that if a viral ad is sent by a trusted sender, the recipient would be more likely to open the e-mail because the recipient is likely to perceive that the viral ad e-mail would be more entertaining and less risky, as compared to a viral ad e-mail sent from an unknown person. Mediation testing was not performed for advertiser trust since this variable did not significantly affect voluntary exposure. Thus, hypothesis 4 predicting the mediating role of preexposure ad perceptions was supported only for the relationship between sender trust and voluntary exposure to the e-mail.

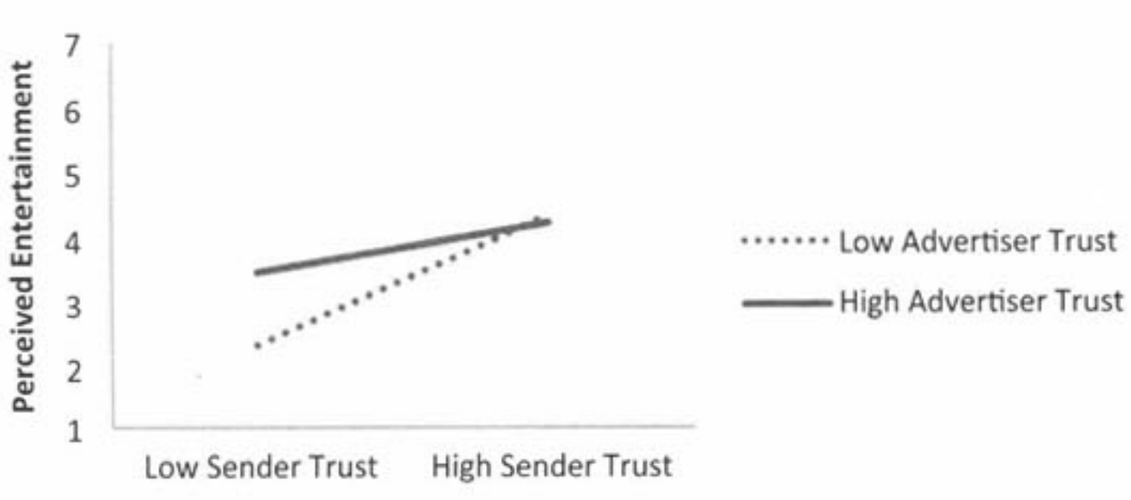

FIG. 2. Interaction effects for perceived entertainment.

Effects on attitudinal outcomes. The descriptive statistics for attitude toward the e-mail content and attitude toward the brand are presented in Table 7. Because only the subjects who opened the e-mail at the third stage were included in this fourth stage of effects, some cells had a very small number of subjects.

To test hypothesis 1d, hypothesis 2d, and hypothesis 3d, predicting the main effect and the interaction effect of sender trust and advertiser trust on attitude toward the e-mail content and attitude toward the brand while controlling for the influence

TABLE 6
Hierarchical Logistic Regression Predicting Voluntary Exposure ($N = 161$)

Model	Variables	*B*	*P*
1	Sender trust	2.356	.001
	Advertiser trust	1.149	.064
	Ad type	.276	.684
	ST × AT	−1.854	.020
	ST × ad type	1.014	.191
	AT × ad type	−.267	.737
−2 log likelihood = 178.584, $df = 6$, $\chi^2 = 32.984$, $p < .001$			
2	Sender trust	1.071	.168
	Advertiser trust	.547	.415
	Ad type	−.334	.681
	ST × AT	−1.639	.055
	ST × ad type	1.055	.221
	AT × ad type	−.135	.874
	Informativeness	.015	.908
	Entertainment	.357	.032
	Irritation	−.102	.568
	Risk	−.394	.031
−2 log likelihood = 160.879, $df = 10$, $\chi^2 = 50.689$, $p < .001$			

Note. ST = sender trust; AT = advertiser trust. The three-way interaction term (ST × AT × ad type) was dropped in this analysis, because all subjects in high ST and low AT and entertainment ad condition opened the e-mail and thus (ST × ad type) and (ST × AT × ad type) explain the same variance of voluntary exposure.

TABLE 7
Attitude Toward the E-mail Content and Attitude Toward the Brand ($N = 102$)

	Information ad				Entertainment ad			
	High ST		Low ST		High ST		Low ST	
	High AT ($n = 17$)	Low AT ($n = 15$)	High AT ($n = 11$)	Low AT ($n = 6$)	High AT ($n = 21$)	Low AT ($n = 16$)	High AT ($n = 12$)	Low AT ($n = 4$)
EmailAtt	4.57 (1.33)	4.82 (1.63)	4.51 (1.41)	2.83 (1.70)	4.02 (1.32)	4.02 (1.32)	3.72 (1.07)	1.75 (.88)
BrandAtt	4.58 (.99)	4.14 (1.38)	4.36 (1.52)	2.67 (1.61)	4.38 (1.13)	3.52 (1.29)	4.52 (1.00)	1.75 (.96)

Note. ST = sender trust; AT = advertiser trust; EmailAtt = attitude toward the email content; BrandAtt = attitude toward the brand. Numbers in parentheses indicate standard deviation.

of preceding dependent variables, a step-down ANOVA (Roy 1958) was conducted. Step-down ANOVA was used because it can test the effects of independent variables on multivariate dependent variables with a hierarchical ordering. The step-down analysis utilized two consecutive F tests. The first F test was a univariate three-way ANOVA with sender trust, advertiser trust, and ad type as independent variables. The second F test was a three-way ANCOVA with sender trust, advertiser trust, and ad type as independent variables, and preexposure ad perceptions as covariates.

The results of the first univariate F test for attitude toward the e-mail content demonstrate that sender trust ($p < .01$), advertiser trust ($p < .01$), sender trust × advertiser trust ($p < .01$), and ad type ($p = .01$) all significantly influenced attitude toward the e-mail content, supporting hypothesis 1d, hypothesis 2d, and hypothesis 3d (see Table 8). When preexposure ad perceptions were added as covariates in the second F test, however, the influence of sender trust ($p = .30$), advertiser trust ($p = .27$), and ad type ($p = .21$) became nonsignificant, while the sender trust × advertiser trust interaction effect ($p = .03$) still remained significant. Among preexposure ad perceptions, perceived informativeness ($p < .01$) and perceived irritation ($p < .05$) were found to be significant predictors of attitude toward the e-mail content.

The results seem to suggest that sender trust, advertiser trust, and ad type have an indirect effect on attitude toward the e-mail content, which is mediated by preexposure perceptions. Specifically, the influence of sender trust on attitude toward the e-mail content seems to be mediated by perceived informativeness and perceived irritation, while the influence of advertiser trust and ad type appear to be mediated by just perceived informativeness. Interestingly, the interaction effect of sender trust and advertiser trust was found significant even after controlling for preexposure ad perceptions.

We further examined the pattern of the interaction effect of sender trust and advertiser trust on attitude toward the e-mail content with a split-sample t test, and the results are in line with hypothesis 3d. When sender trust was high, the influence of advertiser trust was not significant ($M_{\text{high sender trust} \times \text{high advertiser trust}} = 4.30$, $M_{\text{high sender trust} \times \text{low advertiser trust}} = 4.40$, $t = .33$, $p = .74$), whereas when sender trust was low, the advertiser trust effect was significant ($M_{\text{low sender trust} \times \text{high advertiser trust}} = 4.10$, $M_{\text{low sender trust} \times \text{low advertiser trust}} = 2.40$, $t = 3.35$, $p < .01$). Thus, it was only when both sender trust and advertiser trust were low that attitude toward the e-mail content was noticeably diminished. The graphical representation of the interaction effects is presented in Figure 3.

For testing the influence of sender trust and advertiser trust on attitude toward the brand, an additional covariate, clicking on the ad link, was added to control for a possible confounding effect caused by some participants having had the chance to view the ad content while others did not see it. Among the 102 participants who voluntarily opened the e-mail, 57 clicked on the ad link embedded in the e-mail content and thus had a chance to view the ad content. The same step-down analysis was conducted with attitude toward the brand as the dependent variable. The first F test was a univariate three-way ANOVA with attitude toward the brand as the dependent variable, and sender trust, advertiser trust, and ad type as independent variables. The second F test was a three-way ANCOVA with preexposure ad perceptions, attitude toward the e-mail content, clicking on the ad link as covariates.

As presented in Table 8, in the initial univariate F test, sender trust ($p < .01$), advertiser trust ($p < .01$), and sender trust × advertiser trust ($p < .01$) were found significantly related to the dependent variable, supporting hypothesis 1d, hypothesis 2d, and hypothesis 3d. When attitude toward the e-mail content and preexposure ad perceptions were added as covariates in the second F test, the influence of sender trust ($p = .32$) and the

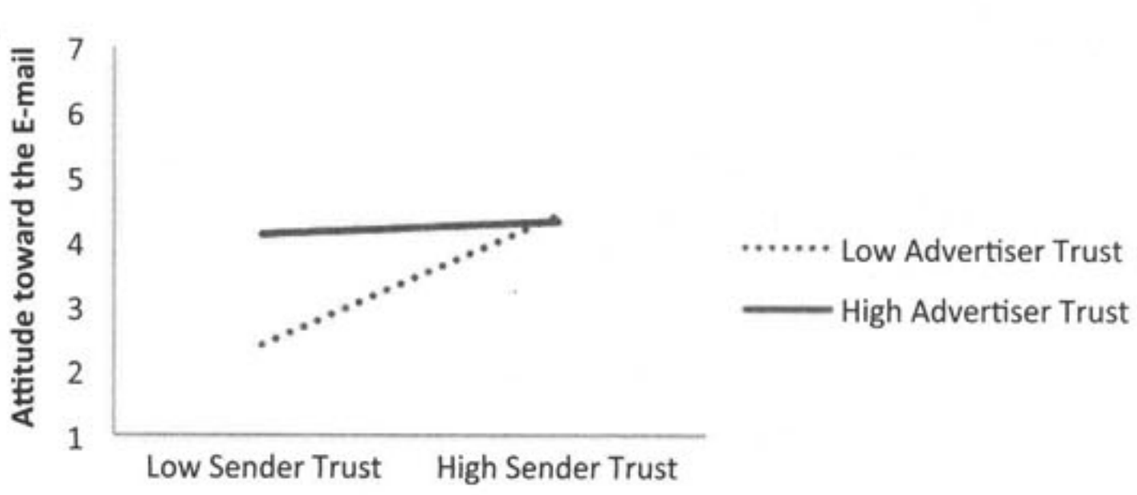

FIG. 3. Interaction effects for attitude toward the e-mail content.

TABLE 8
Step-Down Analysis of Attitude Toward the E-mail Content and Attitude Toward the Brand ($N = 102$)

		Univariate		Step-down	
		F	p	F	p
EmailAtt	Informativeness*			9.039	.003
	Entertainment*			2.753	.101
	Irritation*			4.013	.048
	Risk*			1.157	.285
	Sender trust	14.627	.000	1.089	.300
	Advertiser trust	8.022	.006	1.250	.267
	Ad type	6.724	.011	1.609	.208
	ST × AT	9.933	.002	5.104	.026
	ST × ad type	.230	.633	1.451	.232
	AT × ad type	.243	.623	.381	.539
	ST × AT × ad type	.000	.986	.181	.671
BrandAtt	Informativeness*			1.220	.272
	Entertainment*			.218	.642
	Irritation*			.000	.996
	Risk*			1.871	.175
	EmailAtt*			64.687	.000
	Clicking on the ad link*			.328	.568
	Sender trust	8.771	.004	.837	.333
	Advertiser trust	26.494	.000	19.170	.000
	Ad type	1.977	.163	.382	.538
	ST × AT	7.946	.006	.485	.488
	ST × ad type	.004	.947	.621	.433
	AT × ad type	1.778	.185	1.723	.193
	ST × AT × ad type	.349	.556	.187	.667

Note. ST = sender trust; AT = advertiser trust; EmailAtt = attitude toward the email content; BrandAtt = attitude toward the brand.
*Entered as covariates in the step-down analysis.

interaction effect ($p = .47$) became nonsignificant, but advertiser trust ($p < .01$) remained significant. Among the covariates, attitude toward the e-mail content ($p < .01$) was a significant predictor of attitude toward the brand, while none of preexposure ad perceptions was found significant.

We further examined the pattern of the interaction effect of sender trust and advertiser trust on attitude toward the brand with a split-sample t test, and the results are in line with hypothesis 3d. The effect of advertiser trust on attitude toward the brand was significant in both high and low sender trust conditions ($M_{\text{high sender trust} \times \text{high advertiser trust}} = 4.48$, $M_{\text{high sender trust} \times \text{low advertiser trust}} = 3.81$, $t = 2.27$, $p = .03$; $M_{\text{low sender trust} \times \text{high advertiser trust}} = 4.45$, $M_{\text{low sender trust} \times \text{low advertiser trust}} = 2.30$, $t = 4.39$, $p < .01$). However, the effect size of advertiser trust was greater in the low sender trust condition than in the high sender trust condition (see Figure 4). The results suggest that advertiser trust is most important in determining brand attitude, but higher sender trust can help improve brand attitude when trust in the advertiser is low.

Data in Table 8 were used to test for a mediation effect of attitude toward the e-mail content on the relationship between sender/advertiser trust and attitude toward the brand (hypothesis 5), following Baron and Kenny's (1986) method: (1) sender trust and advertiser trust both significantly predicted attitude toward the brand ($p < .01$; $p < .01$); (2) sender trust and advertiser trust also both significantly predicted attitude toward the e-mail content ($p < .01$; $p < .01$); (3) attitude toward the e-mail content

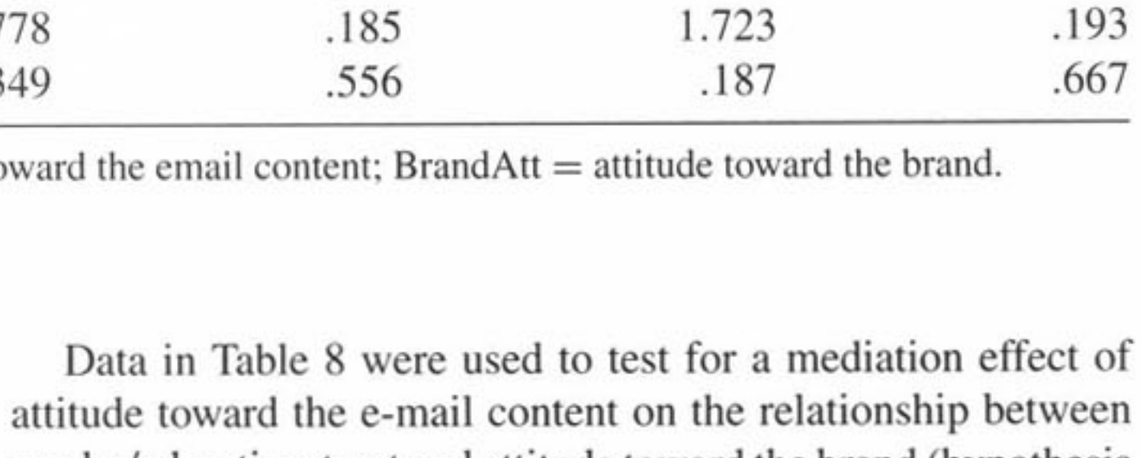

FIG. 4. Interaction effects for attitude toward the brand.

was found to significantly influence attitude toward the brand ($p < .01$); and (4) the significant influence of sender trust and advertiser trust on attitude toward the brand became nonsignificant ($p = .33$) or reduced ($F = 26.49 \rightarrow F = 19.17$) after attitude toward the e-mail content was entered as a covariate. Thus, the results showed that the effects of both sender trust and advertiser trust on attitude toward the brand were significantly mediated by attitude toward the e-mail content. Thus, hypothesis 5 was supported.

Based on the results, it appears that the influence of sender trust on attitude toward the brand was a fully mediated, three-step process: (1) sender trust first generated higher perceived informativeness and lower perceived irritation; (2) the higher perceived informativeness and lower perceived irritation increased favorable attitude toward the e-mail content; and (3) the more favorable attitude toward the e-mail content increased favorable attitude toward the brand. On the other hand, the influence of advertiser trust on attitude toward the brand seemed to be direct as well as indirect through the following three-step mediating process: (1) advertiser trust generated higher perceived informativeness; (2) the higher perceived informativeness increased favorable attitude toward the e-mail content; and (3) the favorable attitude toward the e-mail content increased favorable attitude toward the brand.

DISCUSSION

The current study examined the effects of two types of sources in viral advertising: the advertiser as the message creator and a viral ad e-mail sender as the message distributor. This study identified four effect stages of viral advertising—attention to the viral ad e-mail, preexposure ad perceptions, voluntary exposure to the e-mail, and attitudinal outcomes—and a field experiment was used to test the influence and interaction of the two types of source trust on each of four stages of viral advertising effects. The mediating role of previous stage effects on later stage effects was also examined.

The results demonstrate that the ways in which sender trust and advertiser trust influence ad outcomes are different. First, sender trust was found to influence a wider range of viral advertising effects as compared to advertiser trust. Specifically, while sender trust directly influenced attention to the e-mail and preexposure ad perceptions, and indirectly influenced voluntary exposure to the e-mail and attitudes toward the e-mail content and toward the brand, advertiser trust influenced only preexposure ad perceptions and indirectly influenced attitudes toward the e-mail content and toward the brand. For preexposure ad perceptions, sender trust influenced all four dimensions of ad perceptions, while advertiser trust influenced only perceived informativeness and perceived risk.

Second, the effects of sender trust were stronger than the effects of advertiser trust. Significant interaction effects of sender trust and advertiser trust were found on preexposure perceived entertainment and attitudinal outcomes. Specifically, when sender trust was high, the influence of advertiser trust was not significant on perceived entertainment and attitude toward the e-mail content. Only when sender trust was low was advertiser trust found to matter in influencing these outcomes. The results of interaction effects demonstrated that the influence of high sender trust can overpower or rub off on any effects of advertiser trust, thereby causing a viral ad from a less trusted advertiser to be as effective as a viral ad from a trusted advertiser.

These differential effects of sender trust and advertiser trust can be explained by the different types of trust consumers have with each source. In the viral advertising context, sender trust was conceptualized as being based on relational trust where personal ties between the sender and receiver stem from shared values, benevolence, and the emotional attachment between the two parties. Advertiser trust, on the other hand, was thought to reflect calculative trust, which is based on the advertiser's reputation. The trust literature suggests that relational trust influences a trustor's positive expectations about an interaction with the trustee across a wide range of areas, whereas calculative trust influence is limited to specific areas based on the trustor's history of reliability (Lewicki and Bunker 1996; Rousseau et al. 1998). The strength of influence also differs between relational trust and calculative trust. People are willing to rely on their friends or family members in making decisions, even when uncertainty is high, while this would not be the case with people who share calculative trust with one another (Rousseau et al. 1998). The results of this study are generally consistent with predictions based on these two types of trust.

In addition, the results of mediation analyses and step-down analyses revealed that preexposure ad perceptions also played an important role in determining viral ad effects at the later stages. Sender trust was found to only indirectly influence voluntary exposure to the e-mail (through perceived entertainment and risk) and attitude toward the e-mail content (through perceived informativeness and irritation). The influence of advertiser trust on attitude toward the e-mail content was mediated by perceived informativeness. The interaction effect of sender and advertiser trust on perceived entertainment was found to transfer to the interaction effect on voluntary exposure to the e-mail at the later stage. These results suggest that while the source trust factor is an important influence on all stages of viral ad effects, the effects of sender trust and advertiser trust on voluntary exposure to the viral ad e-mail and attitude toward the brand are largely determined by preexposure ad perceptions and attitude toward the e-mail content respectively.

Theoretical and Practical Implications

This study contributes to the advertising research literature in a couple of ways. First, it expands the conceptualization and empirical evidence regarding advertising source effects, particularly in the context of viral advertising, where interpersonal communication functions as an advertising channel. In situations where brand messages are passed along by friends and family members, trust may prove to be a more useful construct

than credibility, the latter of which has typically been much more common in the advertising literature. The role of trust in explaining the relationship and predicting future behaviors between two parties has been emphasized in multiple disciplines (e.g., Lewicki and Bunker 1996; McAllister 1995; Williamson 1993), but the application of the trust concept to advertising research has been scarce (Huh and Shin 2012).

This study offers a theoretical distinction between trust in the interpersonal sender of an ad and trust in the advertiser (relational versus calculative trust) and provides empirical evidence for the differential effects caused by the different nature of trust in the two levels of sources. This conceptualization helps distinguish the impact likely to occur from interpersonal versus mass media or brand reputation sources. This may be particularly useful when applied to social media and user-to-user brand messages.

Second, this study contributes to enhancing our understanding of how viral advertising works by elaborating on the four-stage model of viral advertising effects and identifying and testing key influencers at each of the effect stages. Using a multistage model of viral advertising effects and testing asymmetrical source trust effects on each of the sequential stages provides a more comprehensive picture of how the source factors influence viral ad effects. The overall impact of a viral ad campaign can be harmed by problems at earlier effects stages and fully examining these can become an important diagnostic tool for advertisers.

This study also offers practical implications for advertising practitioners. Our findings suggest that a viral ad campaign that is designed to be shared through preexisting social networks among consumers can be useful in achieving advertiser-expected final outcomes. While the effect of a viral advertising campaign can vary by the advertiser's reputation, viral advertising may be a particularly valuable tactic for advertisers of less well-known brands or those with questionable trust. The significant interaction effects of sender trust and advertiser trust found in this study suggest that a viral e-mail from a trusted friend can overcome the handicap advertisers might have if they are not highly trusted brands. In addition, this study demonstrated that perceived entertainment and perceived risk at the preexposure stage seem to be important factors influencing voluntary exposure to a viral e-mail. These findings suggest that, to increase consumers' voluntary exposure to a viral ad message, advertisers should pay close attention to message cues that could enhance consumers' anticipation of entertainment value and/or lower perceived risk.

Limitations and Suggestions for Future Research

Like all studies, this one has limitations. The data rely on subjects' memory rather than real-time instant reporting at each of the viral ad effect stages. As a result, the participants' answers could have been contaminated by their later stage actions (e.g., viewing the e-mail content or the ad content). Although this study made an attempt to control for the possible confounding effects through statistical procedures, it is strongly encouraged that future studies on viral advertising effects employ different methodological approaches (e.g., lab experiment, real-time measurements of reactions at different viral ad exposure stages) to further test and verify our findings.

Another potential limitation of this study is related to the way sender trust and advertiser trust were manipulated and how the manipulation check was done: Sender/advertiser trust was manipulated as dichotomous variables (i.e., high versus low) for the experiment, and the manipulation check was performed based on aggregated perceived trust data rather than using more detailed multidimensional trust measures. Previous research has demonstrated that trust is a multidimensional construct including such subdimensions as competence, benevolence, and integrity (Gefen 2000; Mayer, Davis, and Schoorman 1995; McKnight, Choudhury, and Kacmar 2002), but our methodological approach did not allow for testing the effects of different subdimensions of source trust. Future studies should consider testing the influence of different trust components on viral advertising effects (e.g., the effect of a viral ad sender who is viewed as honest and benevolent but seen as not competent about the advertised product). Such research could produce more nuanced understandings of source trust effects in viral advertising.

Although this study offers interesting findings that can help explain viral advertising effects and the influence of source trust, some of the findings may be seen as more intuitive than novel. Further research is needed to explore additional aspects of viral advertising. For example, research is encouraged to explore the impact of the message content factor of viral ad e-mails forwarded among consumers. This may be especially needed given that consumers increasingly respond to such e-mails with irritation and skepticism even when the e-mails are sent from close friends or family members.

Application of the trust concept applied here to other types of interactive advertising is also strongly advocated. Advertisers have become increasingly concerned with building relationships with consumers, and have turned social media such as Facebook and Twitter to help achieve this. These media not only connect the advertiser and consumer but also can reach and communicate this relationship to others who are known by the consumer. In this way, advertising can take on dimensions of both mass media and interpersonal communication. In such an environment, trust may become a particularly important construct in explaining successful brand messaging.

FUNDING

This study was funded by a grant from the American Academy of Advertising Doctoral Dissertation Award to the first author.

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APPENDIX

Key Variables and Measurements

Perceived sender trust (7-point scales) (McKnight, Choudhury, and Kacmar 2002): Cronbach's $\alpha = .98$
- I believe that the sender would act in my best interest.
- If I needed help, the sender would do his/her best to help me.
- The sender is interested in my well-being, not just his/her own.
- The sender is truthful in his/her dealing with me.
- I would characterize the sender as honest.
- The sender would keep his/her commitments.
- The sender is sincere and genuine.
- The sender is competent and effective in providing product/service-related information in general.
- In general, the sender is very knowledgeable about product/service-related information in general.

Perceived advertiser trust (7-point scales) (McKnight, Choudhury, and Kacmar 2002): Cronbach's $\alpha = .98$
- I believe that this company would try its best to get me maximum tax refund.
- If I needed help with tax preparation, this company would do its best to help me.
- I feel this company is interested in providing quality tax preparation service to customers, not just making profit.
- I feel this company would be truthful in its dealing with its customers' tax filing.
- I believe that this company would be honest with me regarding its service and fees.
- This company would keep its commitments to provide me with quality tax preparation service.
- I feel this company is sincere and genuine.
- Overall, I feel this company is capable of giving accurate and up-to-date tax information and tips for maximum refund.
- In general, I feel this company is very knowledgeable about all tax-related issues.

Preexposure ad perceptions (7-point scales: "I thought the e-mail would be. ..")
- (1) Informativeness (Ducoffe 1996): Cronbach's $\alpha = .97$
  "Supply relevant tax information"; "Provide timely information"; "A good source of up-to-date tax information"; "A convenient source of tax information"
- (2) Entertainment (Ducoffe 1996): Cronbach's $\alpha = .96$
  "Entertaining"; "Enjoyable"; "Pleasing"
- (3) Irritation (Ducoffe 1996): Cronbach's $\alpha = .83$
  "Insult my intelligence"; "Annoying"; "Irritating"; "Confusing"
- (4) Risk (Jarvenpaa and Tractinsky 1999): Cronbach's $\alpha = .89$
  "Significant risk"; "Lead to a very negative situation"; "High potential for loss"

Attitude toward the e-mail content (7-point semantic differential scales) (MacKenzie and Lutz 1989): Cronbach's $\alpha = .97$
- "Unfavorable/Favorable"; "Negative/Positive"; "Bad/Good"

Attitude toward the brand (7-point semantic differential scales) (MacKenzie and Lutz 1989): Cronbach's $\alpha = .98$
- "Unfavorable/Favorable"; "Negative/Positive"; "Bad/Good"