

Between Likes and Shares: Effects of Emotional Appeal and Virality on the Persuasiveness of Anticyberbullying Messages on Facebook

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Abstract

Growth in the popularity of social networking sites (SNSs) such as Facebook has been accompanied by unintended negative results (e.g., cyberbullying). SNSs could offer solutions, as well. In this article, we explore the persuasive effects of the emotional appeal and message virality of Facebook status updates. Using status updates for a fictitious anticyberbullying organization, we conducted a $3 \times 2 \times 2 \times 3$ (emotional tone \times affective evaluation \times viral reach \times message repetition) mixed factorial experiment ($N=365$). Positive messages resulted in more positive message evaluations and stronger anticyberbullying attitudes and viral behavioral intentions. Further, low message virality led to the most favorable message evaluations, while high virality resulted in stronger anticyberbullying attitudes.

Introduction

SOCIAL NETWORKING SITES (SNSs) like Facebook and Twitter have become a worldwide sensation. Facebook and Twitter have one billion and over 500 million users, respectively.¹⁻³ Commercial companies and nonprofits are leveraging SNSs to better reach their customers. In 2011, 6 in 10 companies had active corporate Twitter and Facebook accounts.⁴ Similar usage is observed among nonprofits, which are using SNSs to advocate for their causes and raise funds, among other activities.⁵ With their growing popularity, SNSs, as well as other technologies (e.g., instant messaging, text messaging, and Websites), have increasingly been used as forums for bullying. The current study explores the use of SNSs as corrective tools in the cyberbullying arena.

Cyberbullying, defined

Cyberbullying, also known as electronic aggression, refers to the use of information communication technologies to perform repeated intentional acts of aggression that reflect a power imbalance "where the offender demonstrates power over the target."^{6,7(p285)} One-fifth of social media-using teens report that their peers online are unkind, while 15 percent report being victims of cyberbullying, and 90 percent say they observe cyberbullying. Over 1 million children have reported being bullied on Facebook.^{8,9} Unlike traditional bullying, which usually takes place at school during school hours,

cyberbullying is not space- and time-bound and can be performed anonymously, thus leading to serious psychological and physical consequences (e.g., suicidal thoughts or behaviors).¹⁰⁻¹²

While most research focuses on cyberbullying among children and teens, we explore this phenomenon with a college-aged population, as it ascends to early adulthood. Intervention-based research has addressed cyberbullying using traditional, unidirectional persuasion to raise awareness about the issue and decrease its prevalence among the younger population.^{11,13-16} The current study investigates how anticyberbullying messages can go viral on popular SNSs like Facebook, thus suggesting a more interactive and user-oriented intervention. The following section provides a conceptual definition of message virality as a way of envisioning the use of SNSs for advocacy purposes.

Defining message virality

Eckler and Rodgers define viral advertising, based on earlier word-of-mouth conceptualizations, as "persuasive messages by an identified sponsor distributed through unpaid communication among peers on interactive digital platforms."^{17(p4)} They argue that viral advertising research has focused on (a) structural features,^{18,19} (b) functionality,²⁰⁻²³ and (c) information processing.²⁴⁻²⁸ Past research mostly explored the effects of content features and relevance,

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motivations, and personality characteristics on processing and behavioral intentions related to viral advertising.^{19,22,28–30} We introduce the concept of message virality by looking at the determinants of user interactivity with a persuasive message disseminated and shared online. Our tripartite approach looks at the messages' viral reach, affective evaluation, and message deliberation.

Viral reach. Viral reach mirrors conceptualizations of traditional message reach,^{31,32} and refers to the volume of message viewing, sharing, and forwarding by Internet users carried out either online or offline. Users can view videos on YouTube and view and share them on SNSs (e.g., Facebook, Twitter, and Pinterest). Viral messages can also be shared offline, yet this remains invisible and impossible to quantify with existing metrics. Assessing viral reach allows researchers to take a behavioral approach reflecting the active nature of online and interactive (as opposed to traditional) media use.^{33,34}

Affective evaluation. Affect, defined as a psychological response with physiological parallels, is a major component of attitude expression and formation toward people, issues, or objects. These evaluations can be positive, negative, or coactive (i.e., both positive and negative).^{35–37} Internet users can privately or publicly indicate their affective responses to online messages by liking a message on Facebook, liking/disliking videos on YouTube, and marking a Tweet as a favorite. We posit that explicit affective evaluation is a component of message virality, as it goes beyond experiencing the emotion, to actual and explicit behaviors.

Message deliberation. The third component of virality deals with users' active and public deliberation of the message (at least within one's own online social network). Social media sites offer users the ability to comment on messages. Deliberation can also entail affective message evaluations, since users' comments can be positive, negative, coactive, or indifferent.

Using persuasion theories and information-processing models, the current study investigates the effects of emotional tone (positive, negative, or coactive) and virality (viral reach and affective evaluations) on the evaluation of anticyberbullying messages.

Emotional appeal and LC4MP

Dual processing models of persuasion, such as the heuristic-systematic model^{38,39} and the elaboration likelihood model,⁴⁰ claim that message features (e.g., argument strength, rational, or emotional appeal) influence cognitive and emotional responses to persuasive messages. Empirical evidence is equivocal as to whether rational advertising appeals are more effective than emotional ones.^{41–44}

The limited capacity model of motivated mediated message processing (LC4MP) rests on five major assumptions. First, humans are information processors with limited cognitive capacity. Second, processing is pertinent to the activation of the appetitive and/or aversive motivational systems. Third, processing is influenced by the message format (e.g., words and still or moving pictures) received through different sensory channels (eyes, ear, and touch). Fourth, information processing is dynamic and takes place over time.

Finally, processing is affected by the way humans interact with messages.^{45–47}

Emotional appeal deals with the ways in which cognitive and emotional responses are triggered as a function of the message's motivational relevance to individuals. Motivational relevance of the stimuli, through the activation of the appetitive (approach) and/or aversive (avoid) motivational systems, determines encoding, storage, and retrieval of mediated information. The conceptualization of emotional appeal, Bolls and Potter argue, should follow the dimensional emotion view that reflects the nature of cognitive and affective responses elicited in the central nervous system.^{35,48} According to the evaluative space model, emotion is defined as a bivariate, rather than a bipolar construct with two components: valence (positive and/or negative) and emotional intensity (arousal).^{49,50}

Several studies posited that messages with strong emotional appeals are more likely to be shared online.^{18,22} Golan and Zaidner found that the majority of viral advertisements use humor appeals (91 percent), followed by sex appeals (28 percent).¹⁸ Eckler and Bolls' participants were more likely to forward positive and coactive (as opposed to negative) viral advertisements.²⁸ Thus, we hypothesize that

Participants will express

H1: more favorable attitudes toward the status update (A_{SU}) for positive status updates, followed by coactive and negative ones.

H2: stronger anticyberbullying attitudes (A_{CB}) upon exposure to positive status updates, followed by coactive and negative ones.

H3: greater viral behavioral intentions (VBI) for positive status updates followed by coactive and negative status updates.

Virality signaling persuasion

Information is an important input for decision making for consumers and distributors of online messages. However, messages are frequently encountered at a surface level with incomplete information about source, credibility, intent, political, or other motivated purpose. Hence, message recipients rely on signals to fill missing information gaps and inform message processing.⁵¹ Signaling theory posits that while some minimal ability to judge the worthiness of a message is desirable, the cost (e.g., time and energy) of acquiring complete information will outweigh the benefits of attaining that information. In this case, signals are used to judge whether or not to interact with any given message. We argue that the message's explicit affective evaluation (likes) and viral reach (shares) serve as signals to inform users about its quality, worth, popularity, and importance. The symbolic nature of these signals facilitates processing by relying on information chunking (i.e., grouping a large amount of information into one consolidated form for easier processing). Signals, in turn, affect an individual's attitudes, behavioral intentions, and behaviors.^{52–54}

Signals such as affective evaluation and viral reach are likely to work, because they meet two of the conditions for signal utility: the costly-to-fake principle, where signals cannot be easily faked; and the full disclosure principle, where the nature of transparent online communication facilitates the distribution of both favorable and unfavorable information.⁵¹ In addition to measuring virality as a dependent variable, we

manipulate affective evaluation and viral reach as features of the message itself. Given limited past research on this topic, we ask the following:

How will the main effects of affective evaluation, viral reach, and emotional tone, and the interaction among them affect

RQ1: attitudes toward the status updates (A_{SU})?

RQ2: attitudes toward the issue of cyberbullying (A_{CB})?

RQ3: viral behavioral intentions (VBI)?

Methods

Participants

Participants ($N=365$) were recruited from introductory courses at a large Midwestern University, and received course credit for participation. Participants were mostly women (63.3 percent), White (75.8 percent), sophomores, and juniors (70.7 percent), and aged around 21 years ($M=20.61$; $SD=1.89$).

Design and independent variables

The current study employed a $2 \times 2 \times 3 \times 3$ (affective evaluation: low vs. high \times viral reach: low vs. high \times emotional tone: positive vs. negative vs. coercive \times repetition) mixed factorial design. Affective evaluation and viral reach were manipulated between subjects. They were defined as the number of likes and shares, respectively, placed beneath the status update. Low likes and shares ranged from 3 to 9, whereas high likes and shares ranged from 1,000 to 1,100. Emotional tone was manipulated within subjects with three levels: positive, negative, and coercive (i.e., both positive and negative), after a pretest with an expert panel ($N=11$).^{28,49,50,53} Each level of emotional tone was represented with three repetitions.

Measures

Three dependent variables included attitude toward the status update (A_{SU}), anticyberbullying attitudes (A_{CB}), and viral behavioral intentions (VBI). A_{SU} and A_{CB} were measured using three 9-point semantic differential scales: bad/good, negative/positive, unfavorable/favorable.⁵⁵⁻⁵⁸ To measure VBI, participants indicated their agreement/disagreement with five statements about whether the status update is worth sharing with others, whether they would recommend it to others, like it, share it, and comment on it on Facebook (1=strongly disagree; 9=strongly agree).²⁸ Aggregate variables were computed for each message after satisfactory factor (percent of variance explained: $M=73.48$ percent, $SD=4.39$ percent) and reliability analyses (Cronbach's $\alpha=M=0.90$, $SD=0.03$). Additionally, participants indicated the number of Facebook friends and time spent daily on the site (open-ended) as well as the frequency of being bullied, cyberbullied, performing acts of cyberbullying, and observing others being cyberbullied (responses ranged from never to several times a week).

Stimuli and procedure

Stimuli were presented to participants as screen shots of Facebook status updates from a fictitious nonprofit organization called sayNOto Cyberbullying. Screen shots were

identical for all messages and treatment conditions, except for the emotional tone and the number of likes and shares of status updates (see Fig. 1). Participants were randomly assigned to one of four evaluation \times reach conditions hosted at SurveyGizmo.com. They first answered questions about bullying, cyberbullying, and Facebook use, and then viewed the nine stimulus messages (randomized order), and answered questions about each message and reported demographic information.

Results

Descriptive results

Most participants reported having a Facebook account (95.30 percent). On average, participants reported having 669 Facebook friends ($M=669.07$, $SD=470.66$), and using Facebook for about an hour and a half daily ($M=91.00$ minutes, $SD=107.57$). While less than a quarter of participants reported having been bullied (22.5 percent), cyberbullied (17.8 percent), or having performed acts of cyberbullying to others (9.6 percent) in the past few months, 68.8 percent of participants reported observing others being cyberbullied. SNSs and text messaging were reported as the platforms where participants were most frequently cyberbullied (27.9 percent and 18.9 percent, respectively), performed acts of cyberbullying (15.6 percent and 13.2 percent, respectively), and observed others being cyberbullied (67.9 percent and 27.9 percent, respectively).

Emotional tone

The first set of hypotheses predicted that there would be a main effect of emotional tone on attitudes toward the status update (A_{SU} ; H1), anticyberbullying attitudes (A_{CB} ; H2), and VBI (H3). To test these hypotheses, data for the three dependent variables were submitted to a set of 3×3 (emotional tone \times repetition) repeated-measures analysis of variances (ANOVAs). Results illustrated that emotional tone had a significant main effect on A_{SU} , A_{CB} , and VBI, where positive messages had the most favorable A_{SU} , strongest A_{CB} , and highest VBI, followed by coercive and negative messages (Table 1; Figs. 2-4). Based on this, H1, H2, and H3 were supported.

Virality

The study's three research questions addressed the effects of affective evaluation, viral reach, emotional tone, and the interaction among them on A_{SU} (RQ1), A_{CB} (RQ2), and VBI (RQ3). Data for the three DVs were submitted to a set of $2 \times 2 \times 3 \times 3$ (affective evaluation \times viral reach \times emotional tone \times repetition) ANOVAs, with repeated measures on the last two factors.

A_{SU} . While the main effects of affective reach [$F(1, 361)=0.18$, $p=0.671$] and viral reach [$F(1, 361)=1.60$, $p=0.207$] on A_{SU} were not significant, the two-way interaction between them was [$F(1, 361)=6.89$, $p=0.009$, $\eta^2_p=0.02$]. Regardless of emotional tone, participants had the most favorable attitudes toward status updates with low likes/low shares, followed by high likes/high shares, high likes/low shares, and low likes/high shares (Fig. 5). Additionally, the effect of the interaction between emotional tone and affective

FIG. 1. Examples of experimental stimuli: positive (top), negative (middle), and coercive (bottom) Facebook status updates.



TABLE 1. RESULTS OF REPEATED-MEASURES ANALYSIS OF VARIANCE FOR THE EFFECT OF EMOTIONAL TONE ON ATTITUDES TOWARD THE STATUS UPDATE, ANTICYBERBULLYING ATTITUDES, AND VIRAL SHARING INTENTIONS

Dependent variable	F-value	Df	P	η^2_p
Attitude toward the status update	57.33	1.78, 651.86 ^a	<0.001	0.14
Anticyberbullying attitudes	23.42	1.72, 624.35 ^a	<0.001	0.06
Viral sharing intentions	28.46	1.89, 686.07 ^a	<0.001	0.04

^aThe assumption of sphericity was violated; hence, the Huyn-Feldt correction for the degrees of freedom was followed.

evaluation (number of likes) was marginally significant [$F(1, 361)=2.91, p=0.089, \eta^2_p=0.01$]. Participants rated positive and coactive messages relatively equal in terms of favorability, as a function of low and high likes, while they rated negative message slightly higher when they had high compared to low likes. None of these differences was significant (Fig. 6).

A_{CB}. The main effects of affective evaluation [$F(1, 361)=2.51, p=0.114$], viral reach [$F(1, 361)=0.64, p=0.425$], and the interaction between them [$F(1, 361)=0.88, p=0.349$] on **A_{CB}** were not significant. However, the effect of the interaction among affective evaluation, viral reach, and emotional tone on **A_{CB}** was significant [$F(1, 361)=6.83, p=0.01, \eta^2_p=0.02$]. Similar trends were observed for positive, negative, and coactive messages, where messages with high likes/high shares resulted in the strongest anticyberbullying attitudes, followed by high likes/low shares, low likes/low shares, and low likes/high shares (except for negative messages; Fig. 7).

Viral behavioral intentions. None of the main effects of affective evaluation [$F(1, 361)=0.05, p=0.816$], viral reach [$F(1, 361)=0.46, p=0.498$], nor the interaction between them [$F(1, 361)=1.51, p=0.220$] was significant.

Discussion

Our findings provide insights into the effects of emotional tone, affective evaluation, and viral reach on individuals' responses to viral social media messages. First, we find that

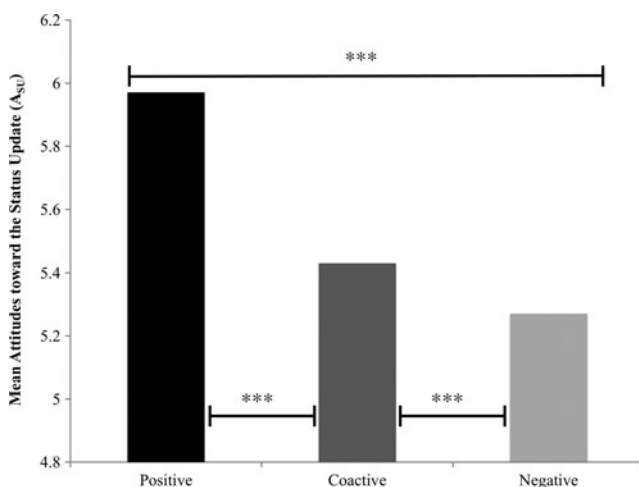


FIG. 2. Mean attitudes toward status updates for positive, negative, and coactive messages ($***p<0.001$).

positive status updates, compared to coactive and negative ones, are rated more favorably, lead to stronger anticyberbullying attitudes, and result in greater VBI, thus confirming past research.²⁸ Positive messages, which arguably elicit appetitive system activation,⁴⁵⁻⁴⁷ are shown to be more accepted and lead to better persuasion outcomes.

With regard to the effect of message virality on persuasion, our findings may seem counterintuitive. We argue that virality signals persuasion by providing cues about the quality of the message, and thus will lead to better persuasion outcomes. Our findings showed that participants' attitudes and behavioral intention varied as a function of the combination of likes and shares. While we see that messages that have not gone viral (low likes/low shares) result in more favorable evaluations of the message, highly viral messages consistently lead to stronger anticyberbullying attitudes, yet that did not affect VBI. The magnitude of these effects is relatively small and plausibly influenced by the manipulation, yet these findings offer intriguing insights to understanding virality.

Ellison et al. argued that the use of SNSs such as Facebook could lead to a higher sense of social capital, defined as the ways in which individuals make use of their social relationships and networks.⁵⁹ This is perhaps why we consistently saw greater sympathy toward the issue of cyberbullying for messages that appeared to be more popular. Participants may have felt the need to be part of the group, thus expressing care toward issues that a larger number of people care about. Conversely, greater favorability for messages (**A_{SU}**) that have not gone viral might have resulted from the lack of

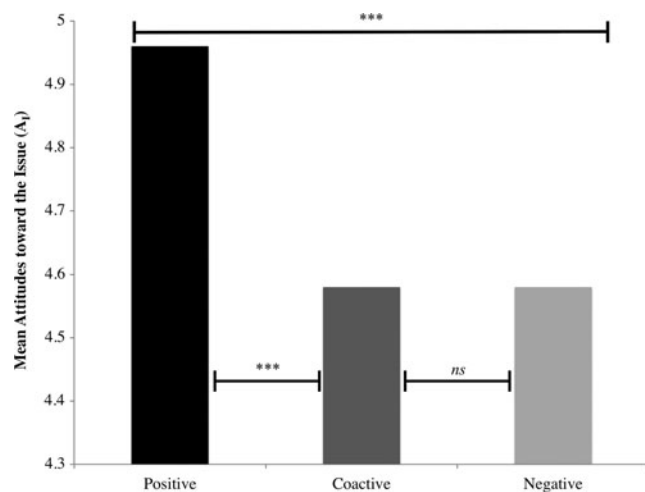


FIG. 3. Mean attitudes toward cyberbullying for positive, negative, and coactive status updates ($***p<0.001, ns=$ nonsignificant).

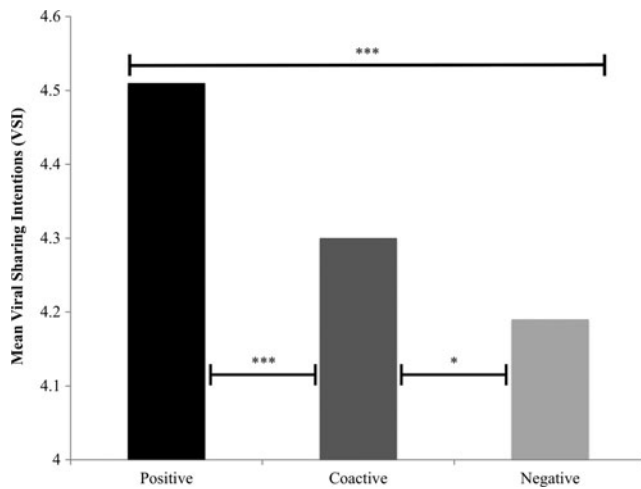


FIG. 4. Mean viral behavioral intentions for positive, negative, and coactive status updates (** $p < 0.001$ and * $p < 0.05$).

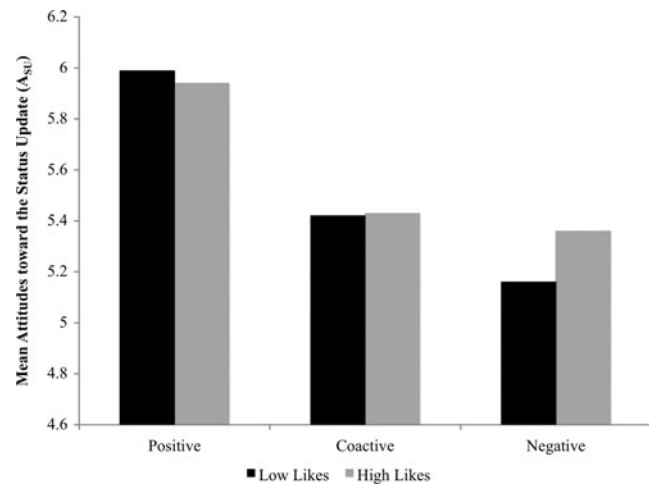


FIG. 6. Effect of the interaction between affective evaluation (likes) and emotional tone on attitudes toward status updates.

group-conformity cues (signals), which provided more room for processing and elaboration, thus leaving more cognitive resources to differentiate between positive, negative, and coactive messages. It is also plausible that participants favored those not-so-viral messages due to their need for novelty and originality.^{45-47,49,50} Finally, virality has not affected behavioral intentions to interact and engage with the anticcyberbullying messages (VBI), which speaks to weakness of the causal link between attitudes and behavioral intentions.⁶⁰

In a nutshell, our findings illustrate that the activation of the appetitive motivational system, evidenced by favorable responses to positive messages, leads to better persuasion outcomes that transcend the effect of other message cues (i.e., virality). Our study, though presenting intriguing insights to cyberbullying prevention through social media, is limited by the nature of our sample (student sample with more woman participants) with regards to generalizing its findings to other and larger populations. Future research should further ex-

plore virality as a message feature with other media formats (e.g., viral videos, viral advertisements), different age groups (e.g., children and teenagers), other measures of cognitive and emotional processing (e.g., implicit attitudes and psychophysiological measures), and certainly different contexts that vary in terms of intensity and user involvement.

Our findings are beneficial to advertising and social marketing practitioners. As illustrated here, and consistent with past research, positively valenced messages are most effective in terms of persuasion. In addition, while marketers and advertisers have little control over who likes and shares their messages online, virality features become a part of the persuasiveness of any given message and thus merit monitoring.

In conclusion, our study showed that positive messages were more effective in driving engagement with anticcyberbullying messages on Facebook. Additionally, virality can both be a message feature and a measure of user engagement with online messages.

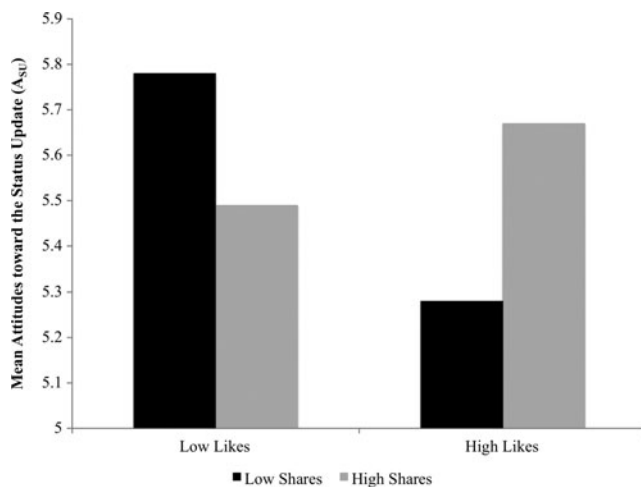


FIG. 5. Effect of the interaction between affective evaluation (likes) and viral reach (shares) on attitudes toward status updates.

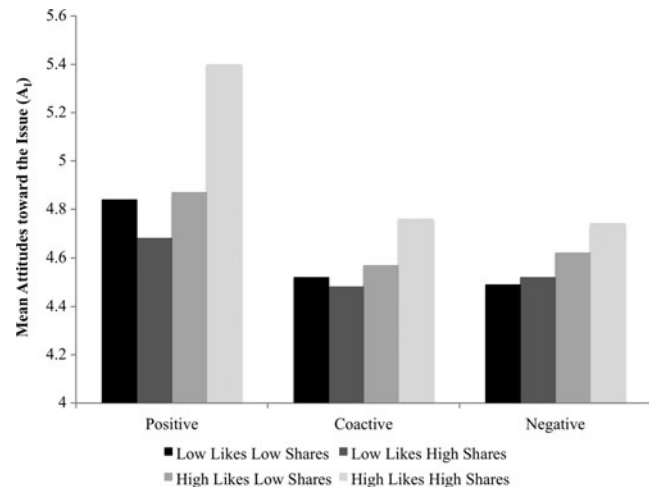


FIG. 7. Effect of three-way interaction between affective evaluation (likes), viral reach (shares), and emotional tone on anticcyberbullying attitudes.

Author Disclosure Statement

No competing financial interests exist.

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