

Running head: SITUATION-TRIGGERED FLAMING

Mr. Hyde Logged In:

A Theoretical Account of Situation-Triggered Flaming

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Abstract

A two-stage study (N = 300) tested a situation-triggered flaming likelihood model on a hot sociopolitical issue, i.e., import of U.S. beef into Korea. In the first stage, it was shown that situational variables (problem recognition, constraint recognition, involvement recognition) lead to more emotional reactions when the organization (government) responds asymmetrically to public, which increases Internet users' likelihood of flaming about the problem-causing entity and situation.

The second study conducted a 2 (frustration) x 3 (socioeconomic status) quasi experiment to test the interaction effect between frustration and SES on online flaming behavior. The lower SES individuals are more likely to engage in flaming when frustration is low but less likely in a high frustration situation, whereas the higher SES individuals are more likely to engage in flaming when frustration is high but less likely in a low frustration situation. We suggest theoretical and practical implications for future flaming studies. (148 Words)

Keywords: flaming, emotion, problem solving, situational perception, SES, frustration

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Arrival of the Internet age has led to almost unfathomable social, political, and cultural impacts at both the societal and individual levels. The Internet is a mixed blessing in that it has a dark side, such as the issues of intellectual piracy, flaming, propagation of inaccurate knowledge, or misconceptions among users. Among these negative impacts from widespread use of the Internet, online flaming has risen as a serious social problem. Recently, for example, a top Korean actress committed suicide because of rumormongering and flaming on the Internet (*New York Times*, Choe, 2008), following a score of Korean celebrities who had committed suicide in the last few years because of flaming.

In a commonsense definition, “flaming” refers to various antisocial or antinormative online communication behaviors such as making direct criticism or blunt disclosure, posting messages containing hostile language or profanity, or expressing opinions that are provocative or nonconforming to the norms held by online community members (O’Sullivan & Flanagin, 2003).

In the extant literature, flaming is more attributable to the depersonalization effect of media or psychological problems (Rock, 1973), or is associated with sociological factors (Kayany, 1998) such as less-privileged social status (education, wealth, age, and gender). Both psychological and sociological aspects enhance our understanding of flamer profiles in a more predictable manner because they are more stable characteristics over time. However, it appears that flaming behavior could arise irrespective of sociological or psychological factors. Specifically, we posit that even those individuals without a psychological disorder or with social privilege could become flammers against problem-causing social objects in some situations. In this vein,

we raise a more situational explanation that some situation-specific perceptual factors, such as problem recognition and constraint recognition, may lead ordinary individuals to online flaming acts.

What this suggests is that we may all be capable of engaging in flaming acts at some point in our lives. Robert Stevenson's (1886) novel *The Strange Case of Dr. Jekyll and Mr. Hyde* describes a person who has both good and evil personalities that change across situations. We may encounter some situations that activate and foster dark sides of our mind, regardless of the extent of our social privileges. As Kurt Lewin (Gold, 1999) once noted, the human act is jointly influenced by psychological, contextual, and situational factors. We thus question what kind of situational variables (i.e., problem recognition, constraint recognition, and involvement recognition) would be more likely to trigger flaming acts, and analyze whether some nonsituational factors (i.e., socioeconomic status) would moderate such online flaming behaviors among ordinary Internet users. If we can understand how and why ordinary people turn into online flammers in their daily lives, we will better understand the process of this new social problem and further lay the ground for decreasing such antisocial behaviors on the Internet.

We first start by developing a theoretical explanation of the underlying process through which lay people are more likely to engage in flaming acts at various times.

STUDY 1: SITUATIONAL ACCOUNT OF FLAMING

Some studies of online flaming behaviors attributed the cause to enduring personal characteristics – *cross-situational factors* – such as innate personal traits or sociodemographics (Denegri-Knott, & Taylor, 2005; Short, Williams, & Christie, 1976). Individuals with more aggressiveness or psychopathic symptoms often show uninhibited verbal aggressiveness, and their behaviors tend to be repetitive (Collins,

1992). In this study we delimit our focus to the *situational factors* one experiences under certain conditions. We contend that a substantive portion of online flaming acts is triggered by situational factors in conjunction with other nonsituational factors. Thus we construct a situational account of flaming behavior and attempt to explain the antecedent conditions that may lead an ordinary person to be an online flamer.

Flaming

Flaming is an antinormative and antisocial computer-mediated communication behavior (Denegri-Knott & Taylor, 2005), known as uninhibited verbal behavior used “to abuse, make offensive comments, or criticize sharply” (Kim & Raja, 1991, p. 7). According to Alonzo and Aiken (2004), flaming generally “requires hostile intentions characterized by words of profanity, obscenity, and insults that inflict harm to a person or an organization resulting from uninhibited behavior” (p. 205).

Despite wide use of the term, however, flaming is hard to define unambiguously. For example, some consider a flaming statement as based on message content such as “speaking incessantly, hurling insults, using profanity” (Baron, 1984, p 130), while others consider it as a byproduct of social context (Kayani, 1998). Kayany (1998) proposes a narrower definition of “uninhibited expression of hostility, such as swearing, calling names, ridiculing, and hurling insults towards another persons, his/her character, religion, race, intelligence, and physical or mental ability” (pp. 1137-1138). Another issue in defining flaming is who is central to judging a given statement as flaming if message sender, receiver, and third-party observer take different viewpoints. As a result, O’Sullivan and Flanagin (2003) redefine flaming as a message in which the creator/sender intentionally violates interactional norms and both the receiver and third-party observers perceive it as violating these norms.

In this study, we posit that it is commonsensical that perceived hostility and the feeling of being insulted by a statement are best judged by the person or party targeted in the message content or context. Also, most available definitions of flaming consider hostility toward another person or object as a central notion of the flaming phenomenon (O’Sullivan & Flanagin, 2003). Thus, in order to operationalize one’s likelihood of flaming, we will use the judgment of whether a statement is hostile and insulting in the eyes of the beholder who is described in the message and who is inflicted by the message content/context.

Explaining Flaming

Two extant accounts of flaming behavior are the *individual-trait driven account* and the *medium-driven account*. The individual-trait driven account identifies individual-antinormative tendency as a cause of flaming (Denegri-Knott & Taylor, 2005). Flaming was thus often attributed to sociological factors (e.g., gender, age), psychological factors (e.g., creativity, assertiveness); or psychopathic personality (e.g., anxiety, sensation seeking) (Alonzo & Aiken, 2004). For example, researchers identified deviant pathological traits such as aggressiveness, the extent of angst or extraaversion as key factors that induce flaming (Rock, 1973; Smilowitz, Compton, & Flint, 1988). Certain sociodemographics such as age (younger) and gender (male) are also attributed as contributing to the likelihood of online flaming acts (e.g., Kayany, 1998; Flanagin, Tiyaamornwong, O’Connor, & Seibold, 2002).

Another type of influential account is the media-driven account. The media account of flaming hinges on the concept of the “deindividuation” effect – i.e., anonymity – inherent in computer-mediated communication (CMC). CMC is a poor simulacrum of offline communications (Short, Williams, & Flint, 1988), and users experience low social presence and low physical cues in interactions (Walther,

Anderson, & Park, 1994). In such media conditions, users fear less being punished or judged by others (reduced social context cues model, Kiesler et al., 1984; Sproull & Kiesler, 1986b). Such low social presence (“deindividuation,” Prentice-Dunn & Rogers, 1982) in turn increases antinormative communication behaviors such as flaming.

Notably, the former account attributes flaming to more enduring individual factors (cross-situational factors of individual characteristics), whereas the latter account attributes it to external factors (contextual account). Although the two accounts contribute uniquely to our understanding of online flaming, we look for a third type of account: flaming triggered by situational individual factors.

Situational Antecedents of Flaming

We believe that a substantial portion of online flaming is triggered by situational factors rather than contextual or cross-situational factors. We posit that the emotional reaction one experiences to the target of flaming may be a direct cause of uninhibited verbal behavior on the Internet. Affective states such as frustration or anger can induce excessive use of offensive language or insulting verbal actions. It is thus worthwhile to explicate how and why flaming-inducing emotional states are created.

Role of Emotion in Problem Solving

Grunig (1966, 2003; Verčič & Grunig, 2000) theorizes the information use and decision-making process in problematic situations. He distinguishes five types of decision behaviors: *problem solving*, *constrained decision*, *ignorant habit*, *routine habit*, and *fatalism*. Whereas problem solving is an entrepreneurial approach adopted when past decision rules or heuristics can no longer be a solution, the other four decision behaviors are nonentrepreneurial but each for a different reason. Grunig explains the role of information in all five types of decision behaviors in his theory. Problem solving is genuine in that information is sought and used for resolving problematic situation

through improving problem-causing conditions and contexts directly (Kim & Grunig, in press). In contrast, the other types of decision behavior are closer to an ad hoc or pseudo problem solving because information uses are limited, selective, or not sought.

Building on Grunig's theory of information and decision making, Kim and Grunig (in press) develop a more generalized situational theory: the situational theory of problem solving. In this theory they distinguish between *genuine problem solving* and *quasi (ad hoc or pseudo-) problem solving* to classify different types of problem-solving strategies.¹ In genuine problem solving, the problem solver attempts to make a direct intervention into problem-causing conditions. This intervention can be performed through revising expected states, reforming experiential states, or changing both states. However, when problem-solving contexts (e.g., shortage of resources or untoward surroundings) limit or prohibit one's genuine problem-solving attempts, one then turns to alternative problem-solving approaches – i.e., quasi problem solving. This can be less desirable but may be best under constrained conditions (cf. Satisficing, Simon, 1957). In the quasi problem-solving approach, one tends to choose a deflecting strategy by either distorting one's perceptual assessment about experiential states or using emotion as a discrepancy-filling instrument rather than narrowing the gap through revising/reforming strategies in genuine problem solving (Kim, 2006).

Analogous to Grunig's (1966, 2003) discussion of the role of information in decision-making situations, Kim (2006) theorizes the role of emotion in *problem detection* and *problem solving*. *Emotion* refers to affective states as “the consequences of ongoing, implicit appraisals of situations with respect to positive or negative implications for goals and concerns” (Schwarz & Clore, 1996, p. 434). In contrast, *affect* refers to feeling states themselves (Schwarz & Clore, 1996, p. 434). Emotion requires objects associated with the affective states, and is goal oriented or situation

specific. Emotion is often construed at least in part as cognition – affective knowledge – regarding the situation the given emotion is about. Kim explains emotion playing as a perceptual device (cf. “cognitive interrupts,” Simon, 1967; “dispositional vs. surveillance system,” Marcus, Neuman, & MacKuen, 2000) in *detection* of the problem.

In addition, emotion serves as a way of problem solving, though often undesirable, when one activates affective states and knowledge to fill the discrepancies between expected and experienced states. Information or knowledge about the problem works as an account for why the given discrepancy comes to exist and how it can be narrowed (Kim, 2006). Yet one deploys affective knowledge as a filler (ad hoc or pseudo problem solving) when information or problem-specific knowledge cannot narrow the discrepancy effectively by changing the experiential or expectation state (genuine problem solving). In this vein, Kim advances a theoretical account that emotion also performs a special function in problem solving, and notes that emotion is not only an affective state but a special type of information – “affective knowledge” (Kruglanski, 1989) – that serves a similar function as information in problem solving. Kim (2006) explains “emotion seeking” in certain problem situations:

In some situations, people cannot solve a problem because of severe constraints, despite their strong desire for problem resolution. Under such constraints, they might skip the process of accruing information (i.e., cognitive details) to construct a solution but turn instead to alternate fillers—i.e., negative emotion seeking. Whereas information helps to close the gap between expected and observed states by fixing appropriate new expectations and/or improving observational states, emotion can create a similar state of closure by filling up the gap with emotional content (e.g., anger). That is, emotion can become a solution of discrepancy that reduces the perceived gap

from badness-of-fit between expected and observed states. In such a case, affective knowledge becomes a special form of information that is functionally equivalent to information about a situation. Thus, when one perceives a problem and feels a strong connection to it, yet also feels strong constraints against doing something about it, one may engage in emotion seeking rather than information seeking (i.e., not by cognitive complexity). (pp. 132-133)

Information is used instrumentally for narrowing the discrepancy by revising the expectation state or improving the experienced state. Specifically, information can be building blocks of a solution, and the solution in turn can be applied to the cause of a problem – effectuating a solution and mending the experiencing state. However, when the information or solution cannot improve the situation, emotion – affective knowledge – tends to play as a pseudosolution and fill the gap between expected and experienced states (Kim & Grunig, in press). In other words, emotion can also be instrumental in problem solving and is neither dysfunctional nor irrational to problem solvers (Rahn, 2000) because it helps them lessen discomfort from the discrepancy.

In sum, the genuine problem solving approach (Kim & Grunig, in press) involves more information-based problem-solving efforts, whereas the quasi (ad hoc or pseudo) problem-solving approach is more emotion-based problem solving when one's genuine problem-solving attempts are ineffective.

Emotion Seeking and Emotion Giving

Emotion is an epiphenomenal state one experiences when information-based problem solving is difficult (Kim & Grunig, in press). We define *emotion seeking* as one's activation of affective knowledge about the problem-causing entity, object, or situation; and *emotion giving* as one's expression and delivery of affective knowledge to others about the problem-causing entity, object, or situation. Both emotion seeking and

giving occur concurrently when one's attempts of genuine-problem solving fail or are constrained. In other words, when one lacks the discrepancy-narrowing mechanism through revising experiential and/or expected states, one turns to a more ad hoc strategy using emotion as a filler to fill the discrepancy. The activation and expression of affective knowledge are less efficacious as a coping strategy than the use of information, and emotion seeking and giving increase as a problematic state continues.

In general, emotional responses such as feelings of frustration or anger increase norm violations and aggressive communication behaviors (Berkowitz, 2001; Geen, 1998). In this vein, as emotion seeking and giving increases, one is more likely to engage in uninhibited verbal behaviors such as aggressive and insulting online postings (flaming).

Situational Perception

Perceptual states about problematic situations have causal influences on feeling and acting about the situations (Grunig, 2005). The situational theory of problem solving explains the relationships between perceptual states about a problematic situation and motivation and between motivation and communicative action (Kim, 2006; Kim & Grunig, in press).

Problem recognition. The situational theory of problem solving defines problem recognition as occurring when one detects that something is missing in a situation and that there is no immediately applicable solution (Kim & Grunig, in press). As a person perceives a problem but feels incapable of finding an immediate solution to it, or lacks the mechanism to reduce the perceived psychological discrepancy, he or she enters a problematic situation (Grunig, 2003; Kim & Grunig, in press). The extent of perceived discrepancy increases one's probability of emotional reaction about the problem-causing entity or situation. Specifically, it is likely that one's seeking and giving

affective knowledge is positively correlated with problem recognition about the situation.

Constraint recognition. Constraint recognition occurs when “people perceive that there are obstacles in a situation that limit their ability to do anything about the situation” (Grunig, 1997, p. 10). People experience little need to communicate in situations where problem-solving conditions prevent people from making choices to cope with problematic consequences (Grunig, 2005). The presence of problem-solving need but absence of a solution leads one to alternative approaches to problem solving (i.e., ad hoc or pseudo problem solving). Thus, whereas constraint recognition decreases communication behavior such as information seeking and processing, it is likely to increase activation of affective knowledge and delivery of it to others about the problem-causing entity and situation.

Involvement recognition. Kim and Grunig (in press) refine the concept of level of involvement into involvement recognition. They attend to the differences between actual connection and perceived connection, and emphasize that our thoughts and actions are based on perceived connection rather than an objective or actual connection. To understand, explain, and predict subsequent problem-solving efforts, it is thus necessary to delimit the conceptual scope to what we perceive as being connected rather than to what we are actually connected to. In this vein, they define involvement recognition as a perceived connection between the self and the problem situation (Kim & Grunig, in press). As in problem recognition, we predict that increases of perceived connection to the problematic situation would increase one’s emotion seeking and giving toward the problem-causing entity and situation.

In summary, we assume that situational problem perceptions (problem recognition, constraint recognition, involvement recognition) will lead to more

emotional reactions, and the increase of emotion seeking and giving will in turn increase the likelihood of flaming about the problem-causing entity or situation. In this regard, we develop a model that accounts for the process of one's situational flaming likelihood (see Figure 1) and the following hypotheses.

- H1. The higher the problem recognition about the situation, the more emotion giving (H1a) and the more emotion seeking (H1b) will occur about the problem-causing target or situation.
- H2. The higher the constraint recognition about the situation, the more emotion giving (H2a) and the more emotion seeking (H2b) will occur about the problem-causing target or situation.
- H3. The higher the involvement recognition about the situation, the more emotion giving (H3a) and the more emotion seeking (H3b) will occur about the problem-causing target or situation.
- H4. The more emotion giving (H4a) and the more emotion seeking (H4b), the higher the likelihood of flaming about the problem-causing target or situation.

[Insert Figure 1 Here]

Method

Procedure and Participants

We designed two studies and collected the data simultaneously. We first conducted a survey to test the proposed model of situation-triggered flaming behavior. We then conducted a quasi-experimental study to test the interaction effect of socioeconomic status and frustration level on the actual flaming tendency. In Study 1 we used a Web survey to determine participants' perception, affective reactions, and online and offline communicative behaviors regarding a hot social issue affecting the majority of the general population. We chose the import of U.S. beef in South Korea,

which has been a hot issue nationally and created a massive number of active publics about the issue in 2008. This issue spawned the country's largest antigovernment protests in twenty years, which continued for more than five months (Choe, 2008). The nation has divided into two groups, one that advocates the government's decision to import U.S. beef (a progovernment active public), and one that opposes the government's decision and demands renegotiation (an antigovernment active public).

Participants in this study were recruited through a nationwide online specialized research firm that solicited participation from their over 400,000 existing Korean research panel members by e-mail. When participants accepted the e-mail solicitation, they were linked to a Website survey. Participants were instructed that the survey was completely anonymous and they were free to skip questions and withdraw from the survey at any time.

Measures

Flaming likelihood. Participants were asked to indicate their self-designated online flaming-like communicative actions using a 7-point Likert-type scale, ranging from 1 (not at all) to 7 (very much). Four measures were used ($\alpha = .81$): "I have made harsh refuting posts against those who attacked and cursed peaceful protesters on the Internet" (antigovernment participant), "I have made harsh refuting posts against those who attacked and cursed the government and who advocated protests on the Internet" (progovernment participant); "I posted comments against Internet users who were badmouthing the anticandlelight protests" (antigovernment participants), "I posted comments against Internet users who were badmouthing the government" (progovernment participants); "I wanted to flame back to those who are cursing candlelight protesters on the Internet" (antigovernment participants), "I wanted to flame back to those who encourage protests on the Internet" (progovernment participants); "I

wanted to post strong refuting statements to people who were badmouthing protesters” (antigovernment participants), “I wanted to post strong refuting statements to people who were badmouthing the government and encourage protests” (progovernment participants).

Emotion seeking and emotion giving. Emotion seeking and emotion giving were measured by three items using a 7-point Likert-type scale from 1(not at all) to 7 (very much). Emotion seeking items were: “I could not suppress my feelings when I saw people interrupting peaceful candlelight protests” (antigovernment participant), “I could not suppress my feelings when I saw candlelight protesters” (progovernment participant); “I became enraged when I saw government officials and politicians ignoring the risks of mad cow disease” (antigovernment participant), “I became enraged when I saw citizen groups and politicians who were exaggerating fears of mad cow disease” (progovernment participant); “I got angry when I saw the conservative media and conservative civic leaders who cursed candlelight protesters” (antigovernment participant), “I got angry when I saw liberal media and liberal civic leaders who advocated candlelight protesters” (progovernment participant) ($\alpha = .82$).

Emotion giving items were: “When I had conversations about the U.S. beef import issue with family and friends, I talked emotionally” (antigovernment participant), “When I had conversations about the U.S. beef import issue with family and friends, I talked emotionally” (progovernment participant); “I could not suppress my feelings when I saw candlelight protesters” (antigovernment participant), “I could not suppress my feelings when I saw people who interrupt peaceful candlelight protests” (antigovernment participant); “I sent a heckler to the policemen and people who disrupted peaceful protests” (antigovernment participant), “I sent a heckler to the

candlelight protesters who participated in protests” (progovernment participant) ($\alpha = .78$).

Problem recognition, constraint recognition, and involvement recognition.

Situational perception was measured by the subscales of independent variables (Grunig, 1997; Kim & Grunig, 2007). In the final model, two items were measured using a 7-point Likert-type scale from 1 (not at all) to 7 (very much). Problem recognition was measured with: “To what extent do you believe this issue is a serious national problem?” and “I feel that something needs to be done to improve the situation for this problem” ($\alpha = .74$). Constraint recognition was measured with: “Compared with other problems, the issues of U.S. beef import and mad cow disease are difficult to resolve,” and “The governmental responses to U.S. beef import negotiations and protests are disappointingly inadequate” ($\alpha = .68$). Involvement recognition was measured with: “I realized there was a strong connection between U.S. beef imports/mad cow disease and me,” and “I feel the U.S. beef imports/mad cow disease could involve me or someone close to me at some point” ($\alpha = .76$).

Analysis

For Study 1, we used structural equation modeling. The analysis consisted of two-step structural equation modeling (Kline, 1998). In the first step, the measurement phase, we analyzed and selected the best measurement items for each construct. We checked for correlated residuals and cross-loadings and removed low loading items in each construct. In the second step, the structural phase, we compared the final confirmatory models with the proposed structural models. Our a priori structural model produced reasonable data-model fit. Hence, our final model was tested as we originally specified.

To evaluate the proposed structural equation models, we used commonly used model fit indices, such as Comparative Fit Index (CFI), Root-Mean-Square-Error-of-Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).

Results

Structural Model Testing and Hypothesis Testing

According to Hu and Bentler's (1999) joint-criteria approach, a model is considered viable when it achieves $CFI \geq .96$ and $SRMR \leq .10$ or $RMSEA \leq .06$ and $SRMR \leq .10$. In this study, our conceptual model of situation-triggered flaming likelihood reached an acceptable level of model fit: $CFI = .97$, $RMSEA = .06$, and $SRMR = .10$. We thus proceeded to interpret the model parameter estimates to test the hypotheses. We posited four set of hypotheses that specified the relationship between situational perception and emotional states, and between emotional states and flaming likelihood. Findings for the structural testing model are summarized in Figure 2.

[Insert Figure 2 and Table 1 Here]

For H1-H3, we consider increases of information behaviors and activation of emotion (affective knowledge) as epiphenomenal phenomena in the problematic situation (Kim, 2006). When one's efforts in information behavior to search for and apply knowledge to a problem cannot resolve problematic consequences (genuine problem solving), emotion begins to play as a filler for the gap between expected and experienced states – i.e., quasi problem solving. In this vein, we predicted that one would search and deploy affective knowledge in a situation when one's problematic perception increases.

In H1a-b, thus, we expected positive relationships between problem recognition and emotion giving about the problem-causing target or situation (H1a), and between problem recognition and emotion seeking about the problem-causing target or situation

(H1b). We found positive path coefficients for both paths: H1a, $.46, p < .001$ and H1b, $.50, p < .001$. In H2a-b we expected positive relationships between constraint recognition and emotion giving about the problem-causing target or situation (H2a), and between constraint recognition and emotion seeking about the problem-causing target or situation (H2a). We found strong positive path coefficients for both hypotheses: H2a, $.54, p < .001$ and H2b, $.80, p < .001$. In H3a-b we expected positive relationships between involvement recognition and emotion giving about the problem-causing target or situation (H3a), and between problem recognition and emotion seeking about the problem-causing target or situation (H3b). We also found positive path coefficients for both paths: H3a, $.37, p < .001$ and H3b, $.14, p < .01$.

H4a-b asked how one's emotion-based quasi problem solving would increase one's flaming likelihood for an issue in which a genuine problem solving is discouraged – i.e., when having and applying information would not improve the problematic situation. In the issues of U.S. beef import and fear of mad cow disease, the Korean government had already ruled out the possibility of renegotiation since the government representatives had finalized the U.S.-Korean mutual agreement and treaty about the importing procedure. Thus the majority of Korean citizens turned to quasi problem solving – experiencing anger and resentment. We hypothesized that emotion-based quasi problem solving would increase the likelihood of flaming. In H4a-b, thus, we expected positive path coefficients. We found support for both hypotheses: H4a, $.50, p < .001$ and H4b, $.39, p < .001$.

We therefore conclude that as one is led to a more emotion-based quasi problem solving (activating and deploying affective knowledge) in a problematic situation that limits genuine problem solving, one will engage more in flaming behavior toward the problem-causing entity or situation.

STUDY 2: INTERACTION OF CROSS-SITUATIONAL AND SITUATIONAL FACTORS

Our second research question focuses on if there is an interaction effect between a socioeconomic status (SES) and situational condition (feeling of frustration) that may induce the lay individual to become a flamer. This question helps us understand whether there is a different deindividuation effect on flaming across different SES groups as frustration increases, and how and why this would occur. It thus links extant theoretical explanations on flaming – i.e., the media-driven account and the individual-trait driven account – with the situation-triggered account.

We predict that low SES individuals would engage in flaming more frequently when frustration level is low, whereas high SES individuals would engage in flaming more when frustration level is high. We predict this for two reasons: a) higher perceived subjective utility of the deindividuation effect among higher SES individuals, and b) the different time points of becoming fatalistic among different SES levels. In general, those more educated and high social status individuals tend to subscribe or be under more pressure to meet conversational norms and communication etiquette in face-to-face and offline communication settings (c.f. cooperative principle, Grice, 1975). Even when there is strong disagreement, for example, higher SES individuals are more likely to subscribe communicative norms than low SES individuals, i.e., suppress their anger and hostility in exchange opinions, avoid insulting the communication partner publicly, and help face saving of conversational partners. If high SES individuals experience increased constraints in a problematic situation and therefore higher frustration, they would find higher subjective utilities of the deindividuation effect associated with the computer-mediated communication setting. In other words, the pleasure of freeing oneself from the pressure of communicative norms will be experienced more strongly as

one's perceived frustration increases. In contrast, low SES individuals are relatively less restrained by communicative norms in offline interactions, and hence would experience relatively less pleasure or utility from the deindividuation effect of the Internet.

Furthermore, low SES individuals experience the lack of intellectual and material resources more acutely in dealing with a problematic situation (Grunig, 1966, 2003). The difficulty in mobilizing resources to cope with problematic situations will be felt severer for low SES individuals than high SES individuals. Hence, low SES individuals become *fatalistic* – feel powerless to change a problematic state – at an earlier point than high SES individuals as constraints increase. Becoming fatalistic means that one accepts most things as inevitable and unchangeable in a problematic situation and that one tends to leave the situation – i.e., a flight response rather than a fight response (Kim & Grunig, in press). Fatalism and a flight response tend to decrease communicative action about the problem (Bandura, 1997; Grunig, 1966; Kim, 2006). Low SES individuals will thus be less likely to be communicatively active about the problematic situation and to engage in flaming less frequently as they experience high frustration.

Using the two problem-solving approaches we discussed earlier, we can state that in a low frustration situation high SES individuals engage more in information-based (genuine) problem solving, while low SES individuals take more of an emotion-based (quasi) problem solving approach (fight response) because they lack problem-solving resources. As frustration becomes higher, however, high SES individuals then change to a more emotion-based (ad hoc or pseudo) problem solving (fight response), while low SES individuals begin to psychologically leave the situation (flight response). Thus the low SES group engages in flaming more frequently in the low frustration condition, but less in the high frustration condition. In contrast, high SES individuals

engage in flaming less in the low frustration condition than the low SES group, but more in the high frustration condition.

H5. There is an interaction effect between frustration and SES in online flaming behavior. Specifically, the lower SES individuals will do more flaming when frustration is low, whereas the higher SES individuals will do more flaming when frustration is high.

Method

Procedure

In Study 2 we designed a quasi experiment in which participants read two stimulating news articles by political columnists related to a nationwide hot issue.² Participants were then asked to judge if they agreed or disagreed with the columnists. Each pro- or con-position participant was given two equivalent sets of five online posts regarding the columnist's viewpoint. These five posts were comparable and consistent with their position but varying in terms of the strength of statements. (i.e., the stronger the expression, the closer the statement was to a flaming post).

Because of its prolonged collective actions, quite a few controversies and subissues were derived from the issue. Among them, vocal conservative political groups staged counterprotests and progovernment commentators criticized protesters through media and their own websites. One of the progovernment political commentators, Cho, Gap-Je, who is considered a Korean Rush Limbaugh, had written a series of controversial columns to discourage public reaction and citizens' protests ("candlelight protests"). His provocative columns triggered a large number of angry responses among the antigovernment citizens, while also generating enthusiastic supporters of his claims (e.g., "those candlelight protesters who came with their children are lunatics who are showing pornography to their kids").

We asked participants to select one posting statement that they would post regarding Cho's columns. In addition, we asked questions about participants' sociodemographic status and their frustration related to the government's and political parties' approach and reaction in dealing with the issue of importing U.S. beef.

Measures

Flaming tendency. In Study 2 we tested if participants flaming tendency varies based on their frustration and socioeconomic status. To test this, we created a variable of flaming tendency. Participants read two columns regarding candlelight protests by a political commentator before they chose the online posting they would like to make. Participants were provided five posting options, varying from a mild to a strong response. To determine the strength of the five statements, we sampled a total of ten posted statements about the commentator's column on candlelight protests (five sets each for pro and con).

We conducted a pilot test using an online experiment that secured anonymity of participants to create a scale of flaming tendency. A total of seventy-seven participants were recruited and read the column and posts. Sixty participants disagreed with the column and seventeen agreed with the column's position about the candlelight protests. The extent of flaming statements was better judged by those whose position was criticized (O'Sullivan & Flanagan, 2003). Thus procolumnist participants evaluated the strengths of posted opinions that criticized the columnist, and vice versa. Based on the frequency of participants' evaluation on the strengths of sampled statements, we rank ordered each set of five statements from strongest (close to flaming) to weakest (nonflaming) statements in Study 2.

Frustration. Frustration was measured with four items ($\alpha = .80$): e.g., "When I have conversations about the U.S. beef import issue with family and friends, I talk

emotionally” (antigovernment participant), “When I have conversations about the U.S. beef import issue with family and friends, I talk emotionally” (progovernment participant); “I could not suppress my feelings when I saw people who interrupted peaceful candlelight protests” (antigovernment participant), “I could not suppress my feelings when I saw candlelight protesters” (progovernment participant).

Socioeconomic status. Two demographic variables, education and income, were used to create extent of socioeconomic status. Using the median of each variable, we dichotomized each variable into high and low groups. We then summed up the two recoded variables, which resulted in three levels of socioeconomic status (low = 0, medium = 1, high = 2). Thus individuals in the low SES group were those who fell below the median in both education and income, the medium SES group were those who fell into either upper median education level or upper median income, and the high SES group were those who fell into upper medians in both education and income.

Results

We conducted 2 x 3 (frustration x socioeconomic status) analysis of variance (ANOVA). Study 2 was conducted as a quasi-experiment study by showing the two stimulating political news articles reporting the political commentator’s columns. The columns vehemently criticized the candlelight protestors against the issues of U.S. beef import and mad cow disease. Because of the divisive nature of this national hot issue, all participants selected their positions about the columnist’s claim (progovernment and anticandlelight protests).

Two-thirds of the participants (n = 200) disagreed with the commentator and his contentions, and one-thirds of the participants (n = 100) agreed with the commentator and his contentions about the candlelight protesters. Participants were then asked to evaluate perceived strengths of five actual posts under the news articles in the Internet

portal and asked to choose which statement they would post in the news article's opinion section.

The main interest of Study 2 was to examine the different tendency of flaming from the interaction of socioeconomic status and frustration. Because the U.S. beef import issue affects almost the entire Korean population, we predicted that frustration and socioeconomic status alone would not have different patterns of flaming tendency. However, we hypothesized that subjective utility of anonymity granted by the Internet would be most appealing when higher SES individuals experienced a higher frustration situation than a low frustration situation. This occurs because the extent of frustration (emotion seeking and giving) is a byproduct of the failed problem-solving effort. It occurs when one's efforts for genuine problem solving using information and attempts to change the problem-causing situation were prohibited.

We found no main effect of frustration or SES. Of greatest present interest, in H5 the predicted two-way interaction effect between frustration and SES was significant, $F(2, 293) = 4.16, p < .05, \text{partial } \eta^2 = .03$. Consistent with our prediction, in the low frustration condition the low SES group was highest in flaming tendency ($M = 2.11, SD = 1.45$) and medium and high SES were similarly lower ($M = 1.63, SD = 1.04$ for medium SES; $M = 1.90, SD = 1.24$ for high SES), while in the high frustration condition the low SES group was lowest in flaming tendency ($M = 1.62, SD = 1.02$) and medium and high SES were similarly higher ($M = 2.15, SD = 1.41$ for medium SES; $M = 2.11, SD = 1.37$ for high SES) (see Figure 3).

[Insert Figure 3 Here]

As we predicted, there is an interaction effect between frustration and SES in online flaming behavior. As people experience a problematic situation, the lower SES individuals engage in flaming more when frustration is low but less in a high frustration

situation, whereas the higher SES individuals engage in flaming more when frustration is high but less in a low frustration situation.

DISCUSSION

In this study we first developed and tested a theoretical account of under what situational conditions ordinary citizens would engage in flaming behavior. We tested the situation-triggered flaming likelihood model using a hot political issue. We believed that situational problem perceptions would lead to more emotional reactions when the organization (government) responds asymmetrically to public (not incorporating citizens' concerns), and the increase of activating and delivering emotional states would also increase likelihood of flaming about the problem-causing entity and situation.

We found support for all the hypotheses in the situation-triggered flaming model (Figure 2). Most notably, constraint recognition (perceived obstacle to doing something about the problematic situation) was the strongest predictor of emotional response (i.e., frustration) to the problematic situation, and in turn to the flaming act. This indicates that the lack of a problem-solving mechanism and resources increases one's frustration most and further increases flaming potential.

Based on Study 1, we developed an additional quasi-experimental study to examine how an emotional state (i.e., frustration) interacts with a socioeconomic status. We focused on two notions: the differential subjective utilities from the deindividuation effect, and differential time points in becoming fatalistic among the SES levels. We predicted that high SES groups (high in education and/or income) would engage in flaming behavior more when frustration is high, whereas the low SES group (low both in education and income) would engage in flaming behavior more when frustration is low. We again found support for this prediction. Both studies suggest that there are some situations in which lay people could become flammers. This potential is found

across all groups of socioeconomic status, and may be in the absence of or amplified by psychopathic personalities.

Implications

The two studies we conducted investigate why and how some Internet users engage in flaming acts. These findings are notable theoretical advancements in research on flaming in that they extend and shift our attention from media-centered, sociological, and psychological accounts to a situation-specific perceptual account. We identified underresearched aspects of flaming in which the media account and individual-trait accounts of flaming behavior were silent. We then showed that flaming can be a situationally triggered behavior as one experiences a problematic situation, and especially when constraint recognition is high. Thus our study contributes not only to theory building on online flaming but also to integrating the new account with extant works.

In addition, the situation-triggered flaming account extends situational theory into an underexplored area of relationship between emotion and problem solving. In the past, situational theory has been tested for individual's responsiveness to problems; amount of and nature of communicative behavior; the effects of communication on cognition, attitudes, and behavior; and the potential for participating in collective behavior in problem resolution (Grunig, 1997, 2003). However, no theoretical extension has been made to account for emotion seeking and emotion giving as dependent variables. In Study 1, we developed hypotheses to test the role of emotion in problem solving and its underlying process connecting situational perception to flaming likelihood. The empirical confirmation of the relationships between situational perceptual variables and affective communication indicates the utility of the situational

theory other than information behaviors. This study thus contributes significantly to extending one important communication theory.

Next, our findings help change our conception from an individual-level problem to an organizational-level problem in inquiring into and reducing flaming. We showed that flaming tendency increases when individuals are negatively affected by a problem-causing entity (government decision makers) but lacking mechanisms to resolve their negative consequences. In the past, most research on flaming considered the causes of flaming from media-unique factors (e.g., deindividuation effect) or from individual characteristics (e.g., male, younger, poor, uneducated, or psychopathic). However, it was shown that flaming can be attributed to organizations or social entities that have negative consequences on citizens' lives and interests.

In this vein, flammers are members of angry publics who arise when their problem-solving efforts are frustrated by asymmetrical responses (i.e., high constraint recognition) and who reciprocate negatively to problem-causing organizations (Grunig, 1997, 2003). This implies that those flaming acts triggered by organization decisions and asymmetrical approach can be better dealt with by changing the organization's responding strategy, including decision/policy modification (Grunig, Grunig, & Dozier, 2002). In other words, regulating Internet users' flaming behaviors (e.g., defamation law) would not be as effective as regulating the social entity's problem-causing behaviors in such instances. These findings redirect our attention to managing organizational factors as a way of decreasing some types of online flaming.

We also found that frustration and socioeconomic status interact, and different SES groups affect the possibility of lay people becoming flammers under different frustration levels. No previous study has directly investigated the interaction effect between SES and situational emotion on flaming behaviors. This finding helps us better

understand the conditions in which individuals with different socioeconomic status engage more or less in flaming behavior, and how and why this occurs. This finding challenges a common stereotype that poor and uneducated individuals are more likely to engage in antisocial, antinormative online communication behaviors.

Finally, our study presents a methodological contribution to the study of flaming. Despite the importance of flaming studies, Riva (2001) and Joinson (2003) note that there is a stumbling block that makes such study difficult—its private nature and wall of anonymity in computer-mediated communication settings. This study created a unique situation that simulated actual online flaming contexts to some degree, since we adopted an anonymous online survey and measured the flaming likelihood by choosing their preferred statements instead of asking them to write their own statements. To create the scale of flaming likelihood, we sampled actual Internet postings to the news articles and rank-ordered the statements from mild to strongest through a pilot test. This methodological approach can be used for future study of flaming.

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Table 1

Correlations, Means, and Standard Deviations (N =300)

Variables	Mean (S. D.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Flaming Likelihood 1	.498 (1.70)	-															
2. Flaming Likelihood 2	4.50 (1.88)	.75	-														
3. Flaming Likelihood 3	2.75 (1.80)	.36	.41	-													
4. Flaming Likelihood 4	3.04 (1.92)	.37	.44	.74	-												
5. Emotion Seeking 1	4.39 (1.65)	.47	.50	.20	.27	-											
6. Emotion Seeking 2	5.33 (1.56)	.63	.54	.19	.23	.58	-										
7. Emotion Seeking 3	5.36 (1.43)	.56	.49	.15	.14	.54	.68	-									
8. Emotion Giving 1	4.37 (1.59)	.35	.40	.30	.33	.37	.35	.47	-								
9. Emotion Giving 2	4.42 (1.54)	.33	.41	.23	.26	.45	.39	.50	.75	-							
10. Emotion Giving 3	3.96 (1.96)	.54	.54	.40	.42	.43	.46	.41	.44	.42	-						
11. Problem Recognition 1	5.52 (1.39)	.26	.24	.03	.03	.30	.39	.40	.31	.38	.15	-					
12. Problem Recognition 2	5.48 (1.21)	.31	.20	.00	-.01	.25	.35	.46	.34	.43	.25	.58	-				
13. Constraint Recognition 1	5.48 (1.21)	.53	.46	.20	.18	.46	.65	.61	.32	.39	.44	.44	.38	-			
14. Constraint Recognition 2	4.10 (1.24)	.15	.23	.21	.25	.22	.13	.18	.22	.17	.14	.12	.11	.52	-		
15. Involvement Recognition 1	4.80 (1.78)	.48	.43	.13	.12	.38	.34	.36	.27	.20	.27	.14	.18	.10	.05	-	
16. Involvement Recognition 2	4.85 (1.81)	.57	.53	.19	.21	.37	.49	.43	.16	.24	.35	.24	.22	.05	-.00	.61	-

Figure 1. Conceptual model: Situation-triggered flaming likelihood

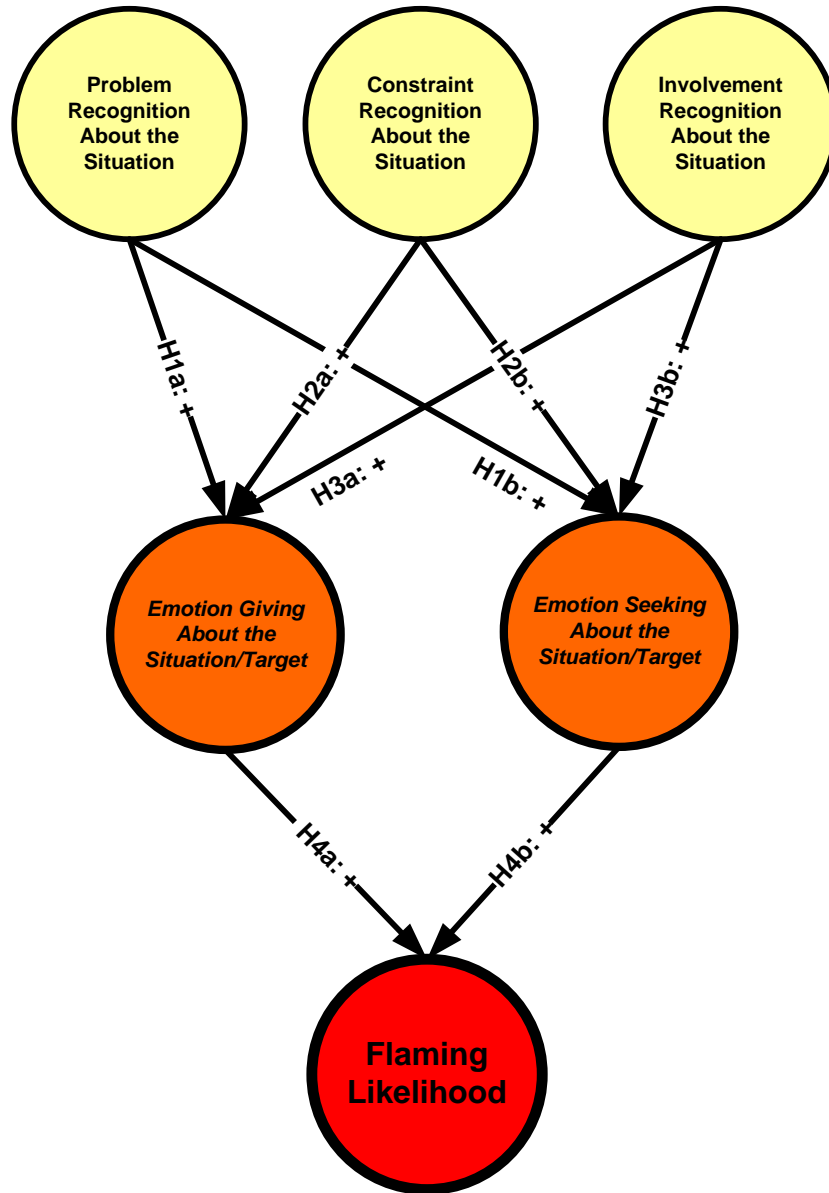


Figure 2. Finding: Situation-triggered flaming likelihood

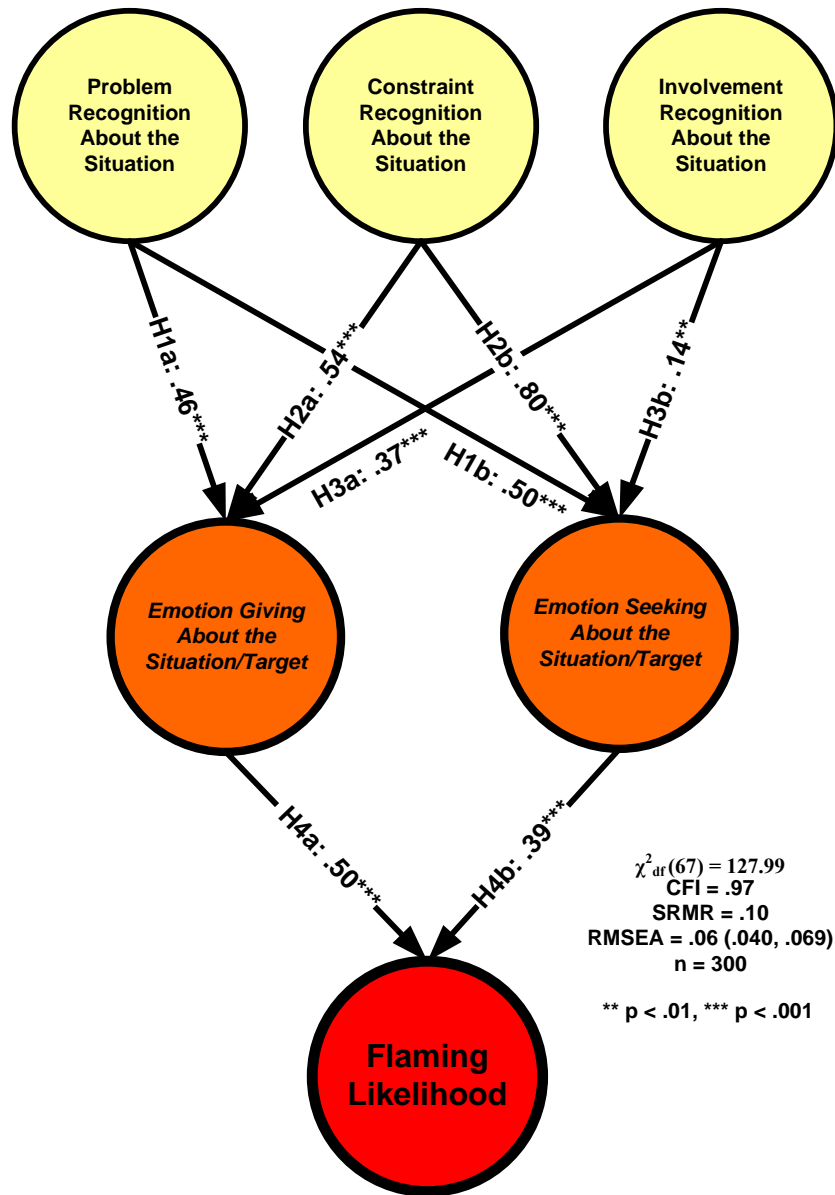
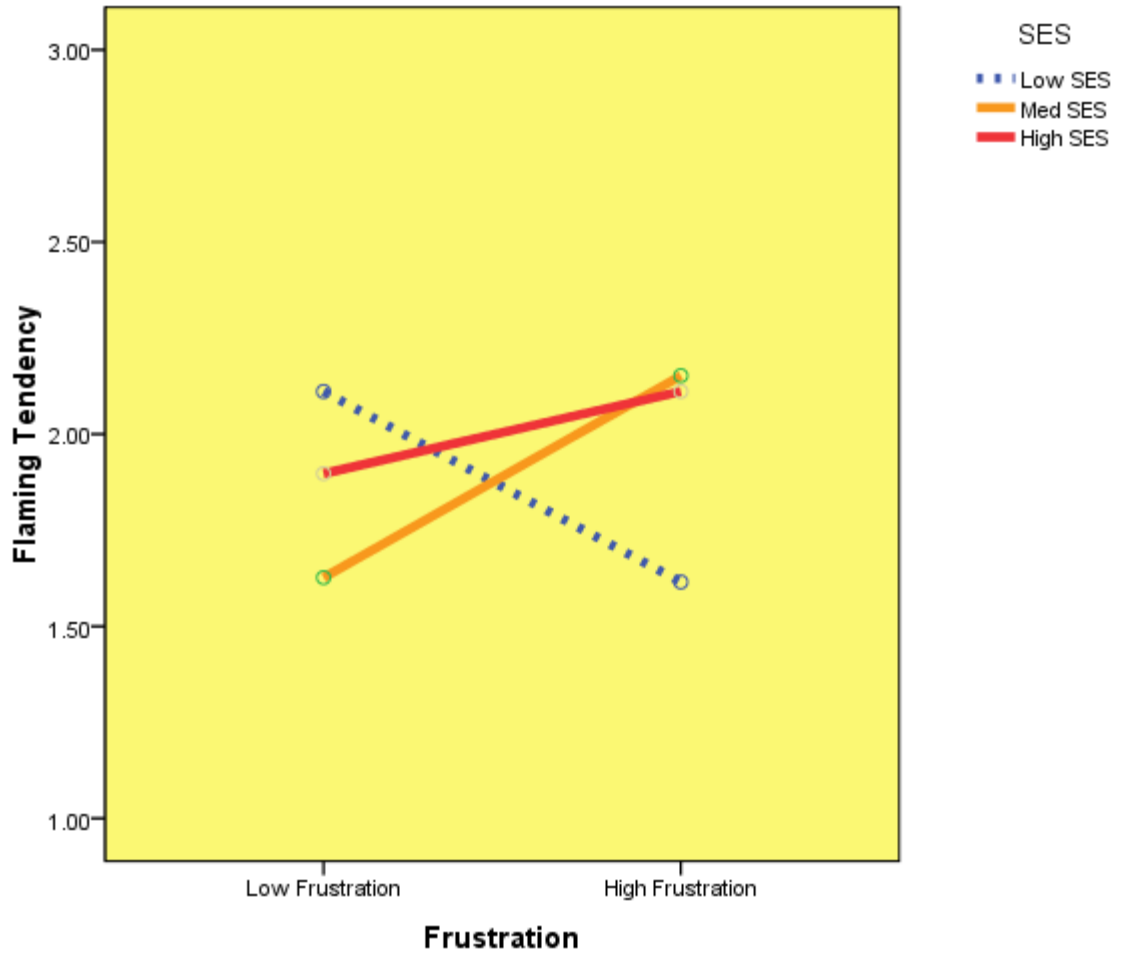


Figure 3. Interaction effect of SES and frustration on flaming tendency



Footnotes

¹ The situational theory of problem solving (STOPS) assumes that most human behaviors are motivated by problem solving. Kim and Grunig (in press) define a *problem* as a perceptual discrepancy between expected and experienced states in a given situation that produces an uncomfortable feeling of badness-of-fit, and defined *problem solving* as one's effort to decrease this perceived discrepancy – *genuine* or *quasi* problem solving.

² We use the term “quasi experiment” in a broader sense as in Shadish, Cook, and Campbell (2002) to refer to a study that attempts causal inquiry about a phenomenon of interest but lacks random assignment – “compromise designs” Campbell (1957). Participants were assigned to pro and con conditions by self-selection; no control group was set because almost all participants are aware of the hot issue and consider themselves to be affected by the issue.