



The expression effects of uncivil disagreement: the mechanisms of cognitive dissonance and self-perception

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Abstract

Political incivility is pervasive and still on the rise. Although empirical studies have examined the effects of exposure to political incivility in different contexts, few have attempted to investigate the expression effects of incivility on its senders. This study proposes two mechanisms—cognitive dissonance and self-perception—to explain the expression effects of political incivility on anger, perceptions of incivility, and political participation. The study conducts a population-based online survey experiment ($N = 413$) in Hong Kong. Participants were either forced to express uncivil or civil disagreements or did so voluntarily. The results suggest that expressing uncivil disagreement increases anger and perceptions of incivility. However, no difference is found between the forced and self-selection conditions, indicating that self-perception is more applicable than cognitive dissonance. In addition, the study finds that expressing uncivil disagreement influences political participation via both anger and perceptions of incivility, though the effects run in opposite directions.

Keywords: political incivility, expression effect, cognitive dissonance, self-perception, swearing

Prior political incivility research has investigated the prevalence of people's exposure to uncivil content online and the consequences of that exposure (Antoci et al., 2016; Coe et al., 2014; Theocharis et al., 2016; Van't Riet & Van Stekelenburg, 2022). However, little is known about the effects of expressing uncivil content on its senders. Although communication content can influence both receivers and senders, the latter group has received much less attention in communication research (Pingree, 2007). The present study proposes two psychological mechanisms to explain how expressing uncivil disagreement influences senders' perceptions, affect, and behavior.

First, incivility has been defined as the violation of social norms (e.g., Bormann et al., 2022; Hwang et al., 2018; Muddiman, 2017; Mutz, 2015), and uncivil expressions are thus generally unacceptable in public discussions. If people are induced to express uncivil content, it will cause cognitive dissonance. According to cognitive dissonance theory (Festinger, 1957), people may perceive the expressed content as less uncivil to reduce this dissonance and justify their behavior if alternative coping strategies are unavailable.

Second, even without dissonance, individuals can draw inferences about attitudes toward and emotions about incivility by observing their own behavior, according to self-perception theory (Bem, 1972; Laird, 1974). Whether a person is instructed to or voluntarily expresses uncivil content such as swearing at others, the sender may view him- or herself to be “angry” about the uncivil action. Unlike cognitive dissonance theory, prior emotions or attitudes are not required in self-perception theory. Instead, feelings are formed during the process of self-perception.

The present study has two key objectives: first, to empirically examine the applicability of those two mechanisms to the expression effects of uncivil disagreement on senders, and

second, to examine how uncivil expression could influence people's willingness to engage in political participation through anger and perceptions of incivility, which are related to the two mechanisms.

Political incivility: from exposure to expression

Online political discourses involving incivility have become a central concern of citizens and scholars promoting online deliberation (Coe et al., 2014; Papacharissi, 2004). As a concept, incivility is difficult to define and operationalize. First, it could refer to a violation of interpersonal norms or the norms of democratic discourse (Muddiman, 2017). Examples of interpersonal incivility include foul language, hate speech, and name-calling, while examples of violating democratic norms include deliberately spreading misinformation and refusing to compromise. The present study adopts the interpersonal-norm definition, given that violating interpersonal norms is more relevant to the informal political discussions that are pervasive on the internet. Compared to violating the norms of democratic deliberation (e.g., accusations of lying), violating interpersonal norms (e.g., name-calling and vulgarity) can be easier to recognize by people engaging in offending conversations and for researchers to identify (Kenski et al., 2020). In any case, violations of democratic norms are usually correlated with violations of interpersonal norms (Sobieraj & Berry, 2011). Therefore, a study of interpersonal incivility will likely have implications for the broader notion of incivility.

Second, whether a given discussion has violated certain social norms can be interpreted differently across individuals and contexts. Previous studies have found that perceptions of incivility are related to demographic and psychological factors such as gender and personality traits (e.g., Kenski et al., 2020). Kenski et al. (2020) demonstrated that name-calling and vulgarity were rated as more uncivil than all other forms

of political incivility. Nevertheless, the interpretation of these strongest forms could be socially contingent. For example, swearing with taboo words could be polite, impolite, or neither and may be used with or without strong emotions, depending on the context (Jay & Janschewitz, 2008). In particular, swearing between like-minded individuals is more apt to be a form of rhetorical sharing to promote social harmony and cohesion (Jay, 2009); in that instance, it is not necessarily associated with any negative emotions at all (Gervais, 2015). By contrast, swearing at unliked-minded individuals is apt to be an emotionally laden expression and understood as offensive (Kwon & Cho, 2017).

To avoid confusion, the present study focuses on swearing (i.e., vulgarity or name-calling) targeting unlike-minded individuals (i.e., political disagreement), since that is the most uncivil form rated by a representative sample of respondents (Liang & Zhang, 2021). This is referred to as uncivil disagreement below. Another relevant issue is whether certain expressions violate social norms varies across cultures (Jay & Janschewitz, 2008). The present study was conducted in Hong Kong, most of whose residents speak Cantonese. A few words in Cantonese (撚, 屌, 鳩, 柒, and 闖; see details in the ‘Method’ section) are normally considered unambiguously vulgar. Nevertheless, those words are also common in daily conversation. Using the terms of Cialdini et al. (2006), those words are injunctively antinormative in that they are commonly disapproved but descriptively normative in that using them reflects what most other people are doing.

One limitation of previous studies on incivility effects is their nearly exclusive focus on the effects of exposure to uncivil messages (e.g., Chen, 2017; Hwang et al., 2018; Theocharis et al., 2016; Wang & Silva, 2018) and the corresponding absence of examinations of the effects of expressing uncivil messages on the senders, although existing research does note the differences between message expression and reception effects on individuals’ attitudes and behaviors. Pingree (2007) argues that “communication can strongly affect message senders” (p. 440) before, during, and after individuals compose and release political messages. Specifically, expression can motivate exposure to, attention to, and elaboration of media messages. Thus, deliberative discussions are broadly expected to generate beneficial outcomes. Empirical studies also suggest that political expression as an action—or more precisely self-expression as a politically active user on digital media—is beneficial for political participation and beyond (Gil de Zúñiga et al., 2014; Lane et al., 2019; Rojas & Puig-i-Abril, 2009). Although political expression in deliberative forms is beneficial, the content of political expression could lack deliberative attributes and also be infused with incivility.

However, the expression effects of political incivility on senders remain largely unexplored both theoretically and empirically. According to Pingree (2007), composing deliberative messages can cause reflections on one’s views and lead to mutual understanding, whereas composing uncivil messages might lead to the opposite. It is because incivility often implies strong opinions and may lead to ego-defensive reactions in the face of political disagreement (De Dreu & van Knippenberg, 2005). In addition to message composition effects, expression effects could work through message release (Pingree, 2007), as they can increase one’s social commitment to the views one has expressed (Tetlock et al., 1989). In this situation, ego involvement could lead to strong or even hostile reactions to political disagreement (De Dreu & van Knippenberg, 2005).

Furthermore, the positive relationship between political expression and participation is expected to be contingent on the perceived reception of the messages and senders’ identifiability (Pingree, 2007). In anonymous online environments like online discussion forums, message release may be also related to cathartic effects, when individuals build up negative emotions that can then be released through verbal aggression (Bohart, 1980). In an experimental study, Stürmer and Simon (2009) found that anger increases participants’ willingness to protest only when that behavior provides the opportunity to release aggressive tensions. When alternative means are provided to reduce anger, such as making jokes about out-group members, the desire to protest disappears. As explained above, expressing uncivil disagreement is likely to be an emotional expression, particularly in an online environment featuring anonymity (Ivory & Kaestle, 2013; Kwon & Cho, 2017). Therefore, according to the cathartic reduction mechanism (Bohart, 1980), expressing uncivil disagreement may decrease senders’ willingness to participate.

In summary, message expression effects should be differentiated from reception effects. Although political expression in deliberative forms on social media has been reported to be beneficial for political participation, it remains unclear whether and how expressing uncivil messages could influence such participation. To fill this gap, the present study extends expression effects by proposing two psychological mechanisms—cognitive dissonance and self-perception—that could mediate the relationship between uncivil expressions and political participation.

Cognitive dissonance vs. self-perception

Two theoretical traditions are especially relevant in explaining the impacts of uncivil expression on senders; both seek to describe how behavior guides beliefs, affect, and attitudes. The first is Festinger’s (1957) cognitive dissonance theory, which follows a motivational approach and holds that dissonance or tension arises when an individual is aware of inconsistent cognitions or beliefs. This unpleasant arousal then motivates an individual to make an attitude change that would produce consistency between thoughts and behaviors. For example, when a smoker is well aware that smoking causes ill health, a feeling of cognitive dissonance is produced. To resolve this inconsistency, smokers can be motivated to change either their behavior by quitting smoking or their cognitions by perceiving that they do not face the same risks that others face. The self-consistency interpretation of cognitive dissonance (Aronson, 1992) is particularly pertinent to the present study. It holds that dissonance arises from the inconsistency between self-concept and behavior and assumes that most individuals have a positive self-concept. Therefore, individuals are likely to experience dissonance when they behave in a way that they view as incompetent, immoral, or irrational.

In the context of uncivil expression, individuals should have at least a minimal level of consensus on the interpretation of uncivil content. Although individuals may interpret the same uncivil content differently, studies have also found a general agreement that some forms, such as vulgarity and name-calling, are perceived as more uncivil than others (e.g., Kensi et al., 2020; Stryker et al., 2016, 2022). Therefore, when individuals are instructed to express a presumably uncivil message, they may experience cognitive dissonance resulting from an inconsistency between their self-concept as moral and civil and their behavior of sending uncivil messages. To cope with

this dissonance, they will be motivated to change either their discrepant behavior by no longer sending uncivil messages or their cognitions through rationalization or denial by determining that incivility is the only means to be heard. Given that whether uncivil content is inappropriate is socially contingent (Braunstein, 2018; Liang & Zhang, 2021), individuals may perceive the expressed content as less uncivil to reduce this dissonance.

One major source of cognitive dissonance is induced compliance (Festinger & Carlsmith, 1959; Harmon-Jones & Mills, 2019), which occurs when an action performed is contrary to the actor's beliefs. Previous studies have also documented that subjects' perceived ability of free choice is essential for generating cognitive dissonance (e.g., Cotton & Hieser, 1980; Frey & Wicklund, 1978). In the absence of perceived free choice (forced), subjects can attribute the inconsistency experienced to the researcher's requests or to potential rewards and as a result will not feel dissonance (Draycott & Dabbs, 1998). In these studies, the choice condition is actually induced (the experimenter would appreciate it if the participants do as instructed). However, if the participants are allowed to choose freely without any expectations (self-selection), the forced condition may generate greater cognitive dissonance, because constraining choice is in itself dissonance-arousing (Stroud et al., 2019). A recent study by Stroud et al. (2019) confirms that individuals who were forced to view counterattitudinal news content experienced greater cognitive dissonance than those who were given a choice. In summary, the induced/forced conditions regardless of perceived free choice generate greater dissonance than self-selection.

To reduce the confounding impacts of a lack of perceived free choice in the forced conditions (no cognitive dissonance in theory), the present study conducted a survey experiment in which participants could not obtain any rewards directly from the researchers. Instead, participants earned points redeemable with the survey company's partners. In addition, participants in all conditions were told to choose words to compose any comments from a list of randomly generated words (see details in the 'Method' section). In the forced conditions, participants were induced to select vulgar words (forced-uncivil) or neutral words (forced-civil). In the self-selection conditions, participants were free to use any vulgar or neutral words (selected-uncivil or selected-civil). If cognitive dissonance does work here, individuals will perceive ostensibly uncivil content as less uncivil to justify their expressive behaviors in forced conditions (perceived incivility in forced-uncivil < perceived incivility in selected-uncivil) because greater dissonance is expected in the forced condition. Nevertheless, it could be empirically problematic to compare the perceived incivility directly between the forced and self-selection conditions because participants who choose to post uncivil content may simply believe that they are using appropriate words. Instead, we can calculate the differences between the civil and uncivil conditions for forced and self-selection conditions separately. The difference in incivility perceptions between forced-uncivil and forced-civil should be smaller than the difference between selected-uncivil and selected-civil. Therefore, we posit the following:

H1: The difference in incivility perceptions between expressing uncivil and civil disagreement will be smaller under forced conditions than under self-selection conditions.

The second theory to explain the impacts of uncivil expression is the self-perception theory (Bem, 1972; Laird, 1974), which adopts a cognitive approach and posits that individuals infer attitudes and feelings by examining their previous behavior and their situations, especially when they are unsure about their motives. In other words, self-perception theory predicts that when individuals are induced to act, they will report feeling the corresponding emotion even if they are unaware of why they are acting or how those feelings arise (Laird & Bresler, 1992). In psychological experiments, manipulation of personal cues produces corresponding changes in feelings. For example, several experimental studies have demonstrated that adopting a sad facial expression produces sadness (e.g., Duclos et al., 1989); conversely, adopting a happy facial expression like smiling induces happiness (Strack et al., 1988).

Smiling and crying are examples of the most readily observable personal cues—postures, actions, facial expressions, physical appearance, and so on—that can lead to emotional feelings, in contrast to situational cues (e.g., social norms and social pressure; Laird, 2007). Self-perception theory holds that individuals can infer their own and others' emotions through the lens of personal cues. In previous studies, the personal cue of vocal behavior has been examined as particularly relevant to expressing political incivility. Empirical studies have demonstrated that paralinguistic features of speech like pace, amplitude, and pitch can convey the state of speakers' emotions (Banse & Scherer, 1996; Scherer, 1986). Thus, following the tenets of self-perception theory, people could infer their own or others' emotions through these paralinguistic cues. Indeed, previous studies have found that emotion-like variations in tone of voice can change speakers' emotions (see Laird, 2007). For example, when subjects were asked to speak in a loud and harsh tone, they reported feeling angrier, whereas those speaking in a soft and low tone reported feeling sadder (Siegman & Boyle, 1993).

Uncivil expressions, particularly swearing, might convey the information that the sender is angry. In fact, swearing—a core component of incivility—has been considered a way to express high-arousal emotions like anger (Jay, 2009; Kwon & Cho, 2017). Previous research has amply documented the association between uncivil political disagreement and negative emotions like anger (Chen, 2017; Hwang et al., 2018; Masullo et al., 2021; Mutz, 2015; Wang & Silva, 2018), though that pattern is not always observed (e.g., Sydnor, 2019). Those emotional arousals have been argued to be caused by exposure to uncivil content. At the same time, some findings also suggest that uncivil content could be an indicator rather than solely a cause of anger. Given that incivility indicates anger, according to self-perception theory, individuals asked to express uncivil messages might believe that they are genuinely angry.

Although the above rationale suggests that uncivil expression leads to anger, it remains possible that the act of expression can actually relieve feelings of anger. According to the catharsis hypothesis (Bohart, 1980), acting aggressively is an effective way to vent anger and aggressive impulses. However, Bushman (2002) found that individuals who manifested aggression by hitting a punching bag reported feeling angrier afterward, which runs counter to the catharsis theory. Another systematic literature review by Tavis (1984) concluded that acting angrily increased angry feelings and behaviors, which is consistent with what self-perception theory would predict (Laird, 2007; Pingree, 2007). Therefore, we posit the following:

H2: Individuals expressing uncivil disagreement will feel angrier than those who express civil disagreement.

A fundamental difference between self-perception and cognitive dissonance theories is that self-perception does not invoke any dissonance. Self-perception theory posits that emotional arousal (e.g., anger) is consistent with the action (e.g., expressing uncivil disagreement), regardless of whether one is forced to act in this way or does so voluntarily. Therefore, unlike *H1*, it is expected that there is no difference in anger between the forced and self-selection conditions. However, the forced condition could be considered a situational cue in self-perception theory (Laird, 2007) and the reported anger could be attributed to the forced condition itself. In this case, the difference in *H2* would be smaller under the forced condition than under the self-selection condition. However, cognitive dissonance research under the misattribution paradigm predicts that there would be no dissonance in this situation, findings that have been used as evidence to demonstrate that self-perception processes cannot account for all the effects produced in dissonance experiments (Harmon-Jones & Mills, 2019). Given these inconsistent predictions, we propose the following research question:

RQ: Is *H2* in forced conditions less extreme than in self-selection conditions?

Expression effect on participation

Both cognitive dissonance and self-perception theories suggest that expressing uncivil content may lead to both uncivil perceptions and anger. Previous studies have demonstrated that both variables can influence the likelihood of political participation, although they do so through different mechanisms (see Chen, 2017; Liang & Zhang, 2021). Given that, this study further explores the participatory consequences of expressing uncivil disagreement.

Anger has been proposed as a key factor in explaining how exposure to uncivil disagreement content can encourage political participation (e.g., Chen, 2017; Wang & Silva, 2018). As Carver and Harmon-Jones (2009) illustrate, anger is an approach-related affect. Because of that orientation, unlike other avoidance-oriented emotions like fear and distress, anger provokes the removal of the violation of what ought to be and can alter people's behaviors, whether in the form of pro-social or antagonistic behaviors (Wakslak et al., 2007). This motivational explanation is also consistent with affective intelligence theory (Marcus et al., 2000), which presents anger as an emotion of aversion that signals the need to confront. According to that theory, if individuals encounter familiar aversive stimuli, they will respond in a routine and habitual manner. Moreover, familiar threats generally activate angry feelings (MacKuen et al., 2010). Thus, we posit that anger will increase political participation:

H3: Expressing uncivil disagreement will increase people's willingness to participate indirectly via anger.

Previous studies have found that anger is not a necessary consequence of exposure to uncivil disagreement but that an indirect effect of uncivil disagreement via anger could increase participation (Chen, 2017; Masullo et al., 2021). The explanation lies in the motivational effect of anger. Many negative

emotions like fear and distress are driven by avoidance. For example, Muddiman et al. (2020) argue that negativity decreases willingness to participate; as perceived incivility is a kind of negativity, perceived incivility is thus negatively associated with news engagement. Indeed, when Liang and Zhang (2021) empirically examined the indirect effect of exposure to uncivil content on political participation via perceived incivility, they found a negative relationship. However, they also note that negative emotions, including anger, were not activated by such uncivil content. This may suggest that incivility perceptions could be an independent mechanism bridging presumably uncivil content and participation. Furthermore, regarding *H1*, the difference in incivility perceptions between expressing uncivil and civil disagreement messages might be smaller under the forced than under the self-selection condition. In the former case, cognitive dissonance may eliminate the effect of uncivil expressions on uncivil perceptions. In contrast, the effect should remain under self-selection conditions or when uncivil expressions do not cause cognitive dissonance. Therefore, in general, we propose the following hypothesis:

H4: Expressing uncivil disagreement will indirectly decrease the willingness to participate via perceived incivility.

Method

Participants

The present study was conducted in Hong Kong, where online political discussion is active and uncivil expressions have been increasing since the 2014 Umbrella Movement. An online survey experiment was conducted by Dynata, a professional online panel vendor. Dynata employed a stratified quota sampling based on gender \times age to match the Hong Kong population between ages 18 and 65 who can speak and write Cantonese. Of the 1,115 individuals invited, 820 participants completed all survey questions; half the respondents ($N = 413$) were randomly assigned to our experimental conditions; 48.2% were male, 59.6% had a college degree or above, and the average age was 38. They participated in a between-subjects experiment embedded in the population-based survey that involved three conditions: (a) being forced to express uncivil disagreement comments, (b) being forced to express civil disagreement comments, or (c) being self-selected to express either civil or uncivil disagreement.

Procedures and manipulation

All participants began by answering demographic questions about gender, age, and education. Second, they were asked a set of questions regarding their familiarity with three public issues in Hong Kong (public housing, zero-COVID policy, and public healthcare). Participants were then directed to read a three-paragraph introduction to Hong Kong's zero-COVID policy, which involved a combination of stringent travel restrictions, quarantines, and track-and-trace efforts to isolate positive cases. The first paragraph described what the zero-COVID policy was, the second paragraph stated the key arguments supporting the policy, and the third paragraph presented the key arguments against the policy (see [Supplementary Materials](#) for Cantonese and English versions of the text). After reading the introduction, participants were asked to indicate their attitudes toward the zero-COVID

policy on a 7-point scale (1 *extremely oppose* to 7 *extremely support*). Only non-neutral participants (i.e., those who did not select 4, $N = 1,115 - 295 = 820$) continued the survey. Excluding neutral participants guaranteed that all experimental subjects would have opponents with different opinions.

Among the 820 participants who continued, 413 (experiment subjects) were then told that the abovementioned policy had been the subject of intense online debate and that some survey participants had reported opinions of the zero-COVID policy that were very different from theirs. The participants were required to compose a comment of no fewer than 30 Chinese characters to those who disagreed with them on this policy.

Next, the participants were randomly divided into three groups (A, B, and C) according to the probabilities of 25%, 25%, and 50%, respectively. In Group A, each subject was asked to compose a comment using at least two words from a list of pre-selected modal particles (all subjects were told that the words were generated randomly from a computer program), which were displayed in random order: 係, 咁, 咩, 嘅, 啲, and 咗 (translations and explanations appear in the [Supplementary Materials](#)). These words are used in everyday, informal, spoken Cantonese (Kwok, 1984) and are usually considered as stop words in natural language processing. They never mean anything profane or vulgar. In Group B, each subject was asked to compose a comment using at least two words from another list: 撚, 屌, 鳩, 柒, 賤, and 閻. These words are the most common profanities and vulgar terms in Cantonese and are generally considered uncivil in public discussions. The decision to use the most popular vulgar terms was made to ensure that they would be comparable to the Group A words. The selected terms are usually considered vulgar and inappropriate without ambiguity by native speakers. Less popular terms do exist, but they also imply ambiguities and can be interpreted differently across individuals. In short, subjects in Group A were in a forced-civil condition, whereas subjects in Group B were in a forced-uncivil condition. In Group C, each subject was asked to compose a comment using at least two words from lists A and B (i.e., 係, 咁, 咩, 嘅, 啲, 咗, 撚, 屌, 鳩, 柒, 賤, and 閻, again displayed in random order). Unlike the subjects in Groups A and B, subjects in Group C were free to pick any civil or uncivil words from the combined list; this was the self-selection condition. Because people are normally less inclined to use vulgar words, we assigned 50% of our subjects to Group C to obtain a sufficient number of uncivil cases in this self-selection condition. A total of 209 subjects were assigned to Group C; 81 (38.8%) voluntarily included at least one vulgar word in their comments (C_1 : selected-uncivil), and the rest 128 (61.2%) were considered as in the selected-civil condition (C_2).

Given the possibility that subjects in Group A could also use vulgar words and that subjects in Group C might use vulgar words beyond the list in Group B, we employed a comprehensive dictionary of incivility developed by Lee et al. (2019) to determine whether a given comment was uncivil. The results suggested that there was only one such case in Group A and two uncivil cases that could not be identified by the list in Group B. Those three cases were unlikely to influence the statistical test results we report below.

Finally, all subjects were asked to answer questions related to their willingness to participate, perceptions of incivility regarding the comments composed, and feelings of anger. Details of the measurements are provided below.

Measures

Willingness to participate in activities related to COVID-19 policies was measured by four questions: (a) “Will you leave comments in relevant discussions online?”; (b) “Will you share the relevant discussions on social media platforms?”; (c) “Will you send emails or postal mail to politicians or government officials to express your opinions?”; and (d) “Will you submit opinion pieces to mass media?” Subjects were asked to rate on 7-point scale their likelihood of participation (from 1 *very unlikely* to 7 *very likely*). Willingness to participate was calculated by averaging these four items ($M = 3.43$, $SD = 1.66$, Cronbach’s alpha = 0.91).

Perceived incivility of what the subjects composed was measured using the four semantic differential items created by Kenski et al. (2020). These four items were rated on 7-point scale with the following reverse-coded anchors: uncivil–civil, impolite–polite, unnecessary–necessary, and disrespectful–respectful. The mean of the four items was computed to measure the perceived incivility of each comment ($M = 3.15$, $SD = 1.12$, Cronbach’s alpha = 0.84). Higher scores indicated greater perceived political incivility.

Anger was measured by asking subjects to use 7-point scale to indicate the degree to which they felt angry, irritated, or annoyed immediately after composing the comments. Similar measures can be found in Stürmer and Simon (2009). The final anger score for each participant was the average of these three ratings ($M = 3.92$, $SD = 1.65$, Cronbach’s alpha = 0.95).

All analyses were performed with the R statistical software (R Core Team, 2022). Ordinary least square regression models were conducted to test $H1$ and $H2$. In the regression models, *selected* indicates the difference between group C ($C_1 + C_2$) and groups A + B, while *uncivil* indicates the difference between groups B + C_1 and groups A + C_2 . If $H1$ is true, $B - A < C_1 - C_2$, *selected* × *uncivil* should be significantly positive. The mediation relationships in $H3$ and $H4$ were tested using R’s *lavaan* package for structural equation modeling (Rosseel, 2012).

Results

Perceived incivility

Model I in Table 1 indicates that subjects who composed uncivil comments perceived a higher level of incivility in their comments than those who composed civil comments ($B + C_1$ vs. $A + C_2$, $B = 0.56$, $SE = 0.11$, $p < .001$). This was consistent with our assumption and confirmed that the manipulation of incivility using vulgar words was valid. Furthermore, according to cognitive dissonance theory, the difference in perceived incivility between uncivil and civil conditions would be greater under forced than under self-selected conditions. However, as Model III in Table 1 indicates, the effect of uncivil expression was not significantly influenced by whether an action was forced ($B - A$ vs. $C_1 - C_2$, $B = 0.16$, $SE = 0.22$, $p = .46$); therefore, $H1$ was not supported.

As we have noted above, individual differences and contexts can affect perceptions of incivility. Some people are less likely to experience cognitive dissonance if they do not see uncivil disagreement as problematic. As a post hoc analysis, we tested heterogeneous effects; the results are presented in Table S1 in the [Supplementary Materials](#). We included gender, age, and prior attitudes toward the zero-COVID policy. Age is negatively related to incivility perceptions and attenuates the positive relationship between uncivil content and uncivil

Table 1. Regression models for predicting perceived incivility under different conditions

	Model I	Model II	Model III
Uncivil vs. Civil	0.56*** (0.11)	0.54*** (0.11)	0.47** (0.15)
Selected vs. Forced		-0.07 (0.11)	-0.14 (0.15)
Uncivil × Selected			0.16 (0.22)
Intercept	2.91*** (0.07)	2.94*** (0.09)	2.98*** (0.11)
R ²	6.1%	6.1%	6.3%
N		413	

Note. Uncivil vs. Civil: expressing uncivil or civil comments to those who disagree with the senders; Selected vs. Forced: self-selected or assigned to express uncivil or civil comments. Standard errors are in parentheses. ** $p < .01$, *** $p < .001$.

perceptions (see [Supplementary Figure S1](#)). The main effect of age should be spurious given that the participants were randomly assigned to the experimental condition. Nevertheless, [Supplementary Figure S1](#) suggests that only the younger participants perceived the comments with vulgar words as uncivil. Besides, we did not find any other interaction effects, indicating that the above finding is mostly consistent across individuals.

Anger

As predicted by self-perception theory, Model I in [Table 2](#) demonstrates that subjects reported a higher level of anger under uncivil than civil conditions ($B+C_1$ vs. $A+C_2$; $B = 0.51$, $SE = 0.16$, $p = .002$); $H2$ was thus supported. Regarding the research question, the effect on anger should not involve any coping motivations. This is consistent with the findings reported in Model III of [Table 2](#): the effect of expressing uncivil comments on anger was not significantly different between the forced and self-selection conditions ($B-A$ vs. C_1-C_2 ; $B = 0.07$, $SE = 0.33$, $p = .834$). The findings also indicate that subjects were unlikely to infer anger from a situation in which they were forced to express incivility (C vs. $A+B$; $B = 0.01$, $SE = 0.22$, $p = .981$). Taken together, our findings support the self-perception explanation rather than dissonance reduction.

Similarly, we conducted a post hoc analysis to examine the heterogenous effects on anger. We did not find any significant interaction effects (see [Table S2](#) in the [Supplementary Materials](#)).

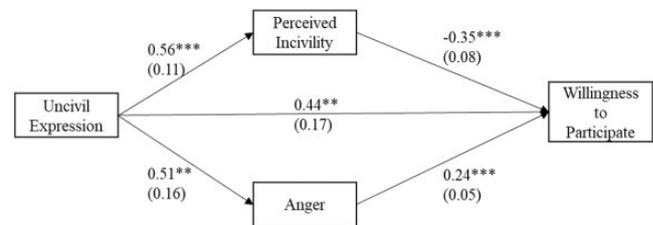
Willingness to participate

Finally, to examine whether perceived incivility ($H3$) and anger ($H4$) mediate the relationship between uncivil expression and willingness to participate, a structural regression model that included both perceived incivility and anger as mediators was conducted to test those two hypotheses. As [Figure 1](#) shows, uncivil expression led to both perceived incivility ($B = 0.56$, $SE = 0.11$, $p < .001$) and anger ($B = 0.51$, $SE = 0.16$, $p = .002$), which are consistent with the findings reported above. In addition, perceived incivility was negatively associated with willingness to participate ($B = -0.35$, $SE = 0.08$, $p < .001$), whereas anger was positively associated with willingness to participate ($B = 0.24$, $SE = 0.05$, $p < .001$). Nevertheless, the direct effect of uncivil expressions on willingness to participate was significant when controlling for perceived incivility and anger ($B = 0.44$, $SE = 0.17$, $p = .008$).

Table 2. Regression models for predicting anger under different conditions

	Model I	Model II	Model III
Uncivil vs. Civil	0.51** (0.16)	0.51** (0.16)	0.48* (0.23)
Selected vs. Forced		0.04 (0.16)	0.01 (0.22)
Uncivil × Selected			0.07 (0.33)
Intercept	3.70*** (0.11)	3.68*** (0.14)	3.69*** (0.16)
R ²	2.4%	2.4%	2.4%
N		413	

Note. Uncivil vs. Civil: expressing uncivil or civil comments to those who disagree with the senders; Selected vs. Forced: self-selected or assigned to express uncivil or civil comments. Standard errors are in parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$.

**Figure 1.** The effects of sending uncivil disagreement on willingness to participate through perceived incivility and anger.

Note. The coefficients were estimated using maximum likelihood. Standard errors are in parentheses and were estimated using bootstrapping 1,000 times: $\chi^2(1, N=413) = 0.862$, $p = .353$, CFI = 1.00. The indirect effect of uncivil expressions on willingness to participate via perceived incivility is -0.19 ($SE = 0.06$, $p < .001$), via anger is 0.12 ($SE = 0.05$, $p = .011$). The total effect is 0.37 ($SE = 0.17$, $p = .025$). ** $p < .01$, *** $p < .001$.

We formally tested indirect effects; both were statistically significant. Specifically, the indirect effect of uncivil expression on participation via perceived incivility was negative ($B = -0.19$, $SE = 0.06$, $p < .001$), while the indirect effect via anger was positive ($B = 0.12$, $SE = 0.05$, $p = .011$). Therefore, both $H3$ and $H4$ were supported. In addition, the total effect of expressing uncivil content on participation was positive ($B = 0.37$, $SE = 0.17$, $p = .025$).

Discussion

In summary, our findings support the predictions of self-perception theory but not cognitive dissonance theory. Aligned with our presumption, comments with vulgar words were perceived as more uncivil than those without. However, the difference in perceived incivility between expressing uncivil and civil disagreements was not significantly moderated by the forced and self-selection conditions ($H1$). It should be noted that $H1$ was intentionally proposed to test the difference (forced vs. selection: $A+B$ vs. C) in difference (uncivil vs. civil: $B+C_1$ vs. $A+C_2$). The first-order difference, if calculated by the difference between the perceived incivility of uncivil disagreement under the forced condition and the perceived incivility of uncivil disagreement under the self-selection condition, remains insignificant (B vs. C_1 : 3.45 vs. 3.48; $p = 0.889$). These findings suggest that being forced to express uncivil messages did not cause stronger cognitive dissonance. Similarly, we did not find any significant difference in anger between these two conditions. Therefore, it is very unlikely

that the expression effects of uncivil disagreement involve motivational processes.

Instead, our findings appear to be more consistent with the self-perception theory. As expected in *H2*, expressing uncivil disagreement causes a higher level of anger than civil disagreement. Furthermore, as we found that anger is unlikely to be caused by the forced condition, we argue that anger is a direct inference of expressing incivility. In addition, we did not find any cathartic release effects. The notion of cathartic effects holds that expressing emotions can reduce corresponding emotional feelings (Bushman, 2002), which means that pre-existing emotions are required. In the present study, subjects may not have developed strong feelings of anger regarding the zero-COVID policy initially, although they did have clear attitudes. The reported anger was thus likely caused by the uncivil action. As Bem's (1972) early research pointed out, self-perception takes place only "to the extent that internal cues are weak, ambiguous, or uninterpretable" (p. 2); if individuals have strong initial emotions, cathartic release effects might be discovered, as proposed in Pingree's expression effect model (2007).

That model illustrates that expression leads to participation because of social commitment to the expressed ideas, ego-defensive motivation, or feeling heard. However, as our experiment did not provide feedback that let our subjects feel heard, it is unlikely that the mechanism of feeling heard could explain our results. Second, those results suggest that the process might not be motivational since there was no difference between the forced and self-selection conditions. In addition, people had no reason to defend themselves if they perceived content as uncivil (see Model I in Table 1). Third, social commitment to the expressed ideas might lead to behavioral repetition and thus could help explain the direct effect of uncivil expression on participation presented in Figure 1. In summary, the present study contributes to the expression effect model by proposing and demonstrating the two additional mechanisms of anger and perceptions of incivility. Even more importantly, it shows that the indirect effects on political participation run in opposite directions.

Limitations and future directions

A few limitations have to be noted and can be addressed in future studies. First, for the sake of simplicity, this study focused on uncivil disagreement messages rather than uncivil agreement ones. Past scholarship has argued that sending uncivil disagreement and agreement messages serve different functions and may thus lead to different effects (Gervais, 2015; Jay, 2009). For instance, Gervais (2015) found that sending uncivil comments to like-minded individuals may lead to a higher level of participation through mimicry rather than anger. Hmielowski et al. (2014) reported that incivility between like-minded peers is considered "normal," so individuals might report lower levels of perceived incivility. Overall, it appears that relationships involving uncivil agreement messages are more straightforward than uncivil disagreement. Nevertheless, future research should consider this perspective and make more fine-grained comparisons.

Second, the survey experiment reported here did not find any cognitive dissonance. However, that does not rule out the possibility that cognitive dissonance may occur under other conditions. The experimental setting here was anonymous (participants were told that their comments would not be viewed by anyone other than the researchers) and unlike

public forums; thus, contextual effects were minimalized. This is obviously not true in the real world, especially in computer-mediated communication (CMC). For example, subjects in CMC may perceive sending comments including vulgar words to those with whom they disagree to be acceptable and not experience any internal conflicts. Hmielowski et al. (2014) found that online political discussion could socialize individuals to see flaming as acceptable behavior and in turn increase their willingness to flame. All these arguments and findings suggest that cognitive dissonance theory might not be applicable to CMC. However, if uncivil disagreement messages were posted publicly on social media platforms, those individuals may reconsider their appropriateness by incorporating social norms into their assessments. This situation may lead to genuine cognitive changes by cognitive dissonance or simply reflect impression management (see Harmon-Jones & Mills, 2019), which is a meaningful question for future studies to pursue.

In addition, adjusting incivility perceptions is not the only way to reduce dissonance in the real world. Another common strategy is selective exposure (e.g., Cotton & Hieser, 1980; Frey & Wicklund, 1978). Furthermore, according to self-perception theory, contextual cues could change individuals' inferences regarding their actions (Laird, 2007). For example, individuals may assimilate themselves to a discussion environment where most comments are uncivil and aggressive and accept that as reality. They mimic others' language without feeling anger. In summary, it would be meaningful to examine the conditions for the applicability of different mechanisms.

Another limitation related to the experimental design is that people are usually not forced to write comments in the real world, even though the forced condition was helpful for us to differentiate mechanisms. Nevertheless, our findings suggest that people may not experience dissonance if they incidentally post uncivil disagreement messages. If the action cannot be corrected, according to the self-perception theory, they might feel angry. Future research can examine cognitive dissonance and self-perception by leveraging incidental posts in the real world.

Finally, willingness to participate was measured by assuming that political participation is generally beneficial. Indeed, our findings confirm that expression—even when uncivil—can be beneficial for participation in online discussions and exchanging ideas with politicians. However, expressing uncivil messages can also be negative. In addition, expressing uncivil messages might be self-reinforced due to either social commitment or anger, which means that uncivil expressions lead to more such actions. Thus, it would be worth testing the expression effects of incivility on different types of participation and engagement.

Despite these limitations, this study formally tested the expression effects of uncivil disagreement on the senders and found that expressing uncivil disagreement increased both anger and incivility perceptions. In addition, uncivil expressions increased the willingness to participate via anger, whereas decreased the willingness via incivility perceptions. Furthermore, the study did not find any difference between the forced and self-selection conditions, indicating that self-perception is a more applicable mechanism than cognitive dissonance.

Supplementary material

Supplementary material is available online at *Human Communication Research* online.

Data availability

The data underlying this article will be shared on reasonable request to the corresponding author.

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Conflicts of interest

None declared.

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