Information Preferences and Comment Styles in Online Opinion Expression when a Negative Public Event Occurs: Essentialism and Social Constructionism Perspective

Wang Yachao[1,2,3]

[1.] Faculty of Psychology, Beijing Normal University, Beijing, 100875, China
[2.] Beijing Key Laboratory of Applied Experimental Psychology, Beijing, 100875, China
[3.] National Demonstration Center for Experimental Psychology Education (Beijing Normal University), Beijing, 100875, China
ivenjiantong@126.com

Abstract: Online expression provides people with a medium to voice their opinions publicly; however, the trend of conflicts, division, and polarization are becoming increasingly prominent. This study explored how the lay theory approach provides a paradigm for understanding which factors lead to the opposition of comment styles when a negative public event occurs. We proposed that the essentialist theory (i.e., certain phenomena reflect deep-seated, inalterable essences) versus the social constructionist theory (i.e., reality is socially constructed, changeable and contextual) are related to different information preferences that affect behavior choices when expressing public opinions online. The two types of lay theories were measured in Study 1 and primed in Study 2. The converged findings illustrated that the essentialism (vs. social constructionism) promotes individuals to express public opinions online in a polarized (e.g., verbal aggression, uncivil comments, extreme views) versus rational (e.g., deliberative discussion, problem-solving comments) manner and demonstrated a more (versus less) rigid attitude toward certain targets involved in public affairs. Furthermore, the effects were mediated by the trait (vs. context) preference when processing public affairs information.

1.Introduction

In the digital age, online participatory media, such as discussion forums, blogs, and social networking sites, play a potent role in public opinion expression and are a cheap and easy way to participate in social public affairs (Brunsting and Postmes, 2002; Garcia et al., 2012). In China, however, because of the limited access to channels that permit participation in social public affairs, 92.2% of web users had never participated in offline collective actions (Qiu et al., 2015). Networks provide channels and opportunities for people to participate in policy-making, complain about social issues, and demand changes in society. Furthermore, new technologies make it easier for people, especially passive readers, to discuss issues like public affairs with members of an online community without the typical constraints associated with face-to-face communication and play an active role in commenting on current events (Cicchirillo et al., 2014).

Despite these benefits, this same phenomenon has created the increasingly severe problem of opinion polarization, and the constant conflicts between opposing groups are highly prevalent in cyberspace (Davis, 2009). Even if the information presented about a social target is all the same, diverse reaction patterns can be observed. Studies have discussed how factors, like anonymity, personality, political ideologies, and group dynamics, shape the ways that netizens choose to participate in online expression (Camaj and Santana, 2015; Fenoll and Cano-Oron, 2017; Halpern and Gibbs, 2013; Koban et al., 2018; Lapidot-Lefler and Barak, 2012; Ridings and Wasko, 2010). Notably, relatively less attention has been given to the stable cognitive characteristics of the participants that might cause these divergent opinion. This study attempted to search for factors about the individual differences in cognition associated with information processing and expressive behaviors in online public affairs participation. Specifically, we sought to investigate how lay theories of certain social targets link to information preferences and behavior choices in online public opinion expression.

Social media platforms, such as Twitter and Facebook, are exerting an increasingly strong effect on public events as information providers, coordination mechanisms, and places of opinion expression. Simultaneously, networked public opinion expression is becoming increasingly fragmented and polarized (Hanna et al., 2013). This phenomenon has manifested

an online environment where network public opinion groups are hotly debating and verbally attacking each other, and netizens are attacking targets or events in real life unilaterally and sustainably (Wu and Zhang, 2015). In these cases, the netizens filter information according to their own needs (Dong and Chen, 2015) and prefer to vent their emotions regardless of the consequences, leading to divided opinions and biased views (Yang and Lin, 2012). Up to 30% of messages posted on discussion boards have been identified as impolite, uncivil, or both (Papacharissi, 2004).

Notably, scholars have observed that public opinion in cyberspace tends to evolve from polarization to rationality (Dong and Chen, 2015), that is, some netizens are inclined to express their views objectively and rationally, paying close attention to public affairs as they exercise their role as responsible citizens. As a result, two styles of comments are observed in online public opinion expression, in particular, after a relatively negative social public event has occurred: polarized expression (i.e., an uncivil and aggressive emotion-venting way of communicating) and rational expression (i.e., civil and deliberative comments that emphasize problem-solving). Comments that exemplify polarized expression are abusive or pass subjective judgement on social targets featured in these social events without evidence; additionally, they commonly convey extreme anger and disappointment regarding society, which may be sufficient to cause public panic. By contrast, in rational expression, the commenters always make an effort to call for finding the truth and passing fair-minded judgements by evaluating social targets cautiously and impartially, reminding the online community to create solutions that improve the current social situation. Without question, polarized expression is destructive to society and creates a toxic environment for online public expression in which the general public loses basic trust and mutual respect for each other, whereas rational expression is constructive and facilitates the best possible decisions.

Which factors lead to the two types of online public opinion expression? We referred to a lay theory approach to understand this division. Lay theories are theories that people use in their daily life to understand people and phenomena in the social world (Hong et al., 2001). These theories resemble scientific theories by providing logical interpretations, convincing predictions, and rules of action on certain issues for common people, and could be regarded as structured and functional meaning systems established by themselves implicitly, without rigorous tests, to make sense of everyday social life (Levy et al., 2006). Lay theories, a joint name, contain a diverse set of specific theories (Levy et al., 2006), such as essentialism (DeLamater and Hyde, 1998; Haslam et al., 2000) and

social constructionism (DeLamater et al., 1998; Durrheim, 1997), which represent opposite viewpoints for understanding social phenomena and are critical for interpreting divergent ways of engaging in online discussion.

As introduced to psychology by Medin and Ortony (1989), essentialism is firstly regarded as a philosophical concept, indicating a belief that certain phenomena have underlying true forms or essences, which are natural and inevitable and determined biologically or culturally (DeLamater et al., 1998; Irvine, 1990). This concept asserts that a discontinuity exists between different forms and the absence of change is over time (DeLamater et al., 1998). After Rothbart and Taylor (1992) introduced essentialism into the research field of social categories in social psychology, it was examined in the literature and covered many topics in this field, such as race (Hirschfeld, 1998), ethnic groups (Gil-White, 2001), and gender (Mahalingam, 2003). This work has shown that essentialists believe that categories have an unobservable essence, deep and universal, that bring about the surface features of category members, and this is changeless and inalterable by human intervention (Haslam et al., 2006; Haslam et al., 2000). As a result, essentialism exerts great implications on group processes and intergroup relations and leads to stereotyping, prejudice and discrimination toward outgroups (Bastian and Haslam, 2006; Haslam and Levy, 2006; Haslam et al., 2002). The fundamental belief in essentialism is immutability of essence and that the effects are always in negative terms.

As a counterpart and alternative to essentialism, social constructionism tells a different story. Social constructionism posits that reality is not what we observe but what we construct by language (Durrheim, 1997; Sayer, 2008). There is no ubiquitous essence; therefore, certain phenomena are the products of a set of culture, history, and language and are dynamic and changeable (Balnaves and Caputi, 1993; DeLamater et al., 1998). Social constructionism was introduced into research on racial conflict by No and her colleagues (2008) as the opponent of essentialism. This concept asserts that race was constructed by sociopolitical factors; thus, racial classification was arbitrary and often created by the dominant group to make inequality between these races justified and reasonable (Hong et al., 2009); hence, the meaning of classification would change if social circumstances changed (Fairchild et al., 1995; Zuckerman, 1990). As a result, racial minority members with social constructionist beliefs could benefit from this concept by becoming more flexible in navigating between cultural frames and showing more consistent identification toward the majority culture (No et al., 2008). In summary, for social constructionism, the

basic belief is that reality is socially constructed and constructing and the impacts seem to be optimistic for future social contexts.

A review of essentialism and social constructionism reminds us of implicit theories, another specific set of lay theory, because of the overlap of research logic and the close connection between them. Implicit theories relate to how people understand the nature of human attributes and propose a distinction between two mindsets: one prompts people to consider that human characteristics are a fixed and changeless entity determined by inheritance and innateness (entity theory), and the other encourages people to deem personal qualities as malleable, changeable, and influenced by upbringing and environment (increment theory) (Chiu et al., 1997; Dweck et al., 1995a, 1995b; Dweck et al., 1993; Huang et al., 2017). These two theories can exist simultaneously within the mind of a single person but differ in chronic accessibility (No et al., 2008). Moreover, it is enticing to unfold the relationship between theories. Haslam et al. (2006) concluded that the cornerstone of entity theory is immutability belief, which should be regarded as a portion of essentialist belief; therefore, essentialist theory could be considered as an extension of entity theory. Incremental theory could be an element of social constructionist theory as well. This commonality provides plenty of advantages for this study because the diverse and rigorous methodology of implicit theories might supplement novel research paradigms for the field of essentialist theory and social constructionist theory, and the focus on social cognitive process of the former is lacking in the social psychological research of the latter (Haslam et al., 2006).

When a typical or negative public event occurs, citizens must process information and explanations and decide whether and how to express their views or feelings in the event-relevant online discussion. This is a process of social judgment. We propose that people who hold an essentialist theory might adopt a different path to comprehend information and form social judgment compared with those who possess social constructionist theory.

First, it could be hypothesized that different people would prefer different types of information under the influence of their lay theory about social phenomena when making social judgments. In this process, they must invoke their mindset of lay theory to perceive and organize information, which would activate the core belief in their meaning systems. As aforementioned, the nucleus of essentialist or social constructionist theory is closely associated with that of entity or incremental theory, that is, immutability or malleability; then, individuals would base their

thinking on implicit theory.

According to the literature, entity theorists were prone to request additional information about actors' dispositions and made their decisions about one actor's behavior based on trait-relevant information, whereas incremental theorists wanted to know more about the status of mediating psychological units (e.g., psychological states, goals, and expectancies) before they made a final decision (Gervey et al., 1999; McConnell, 2001). Thus, it could be inferred that the trait and process focus on information in implicit theory (Molden and Dweck, 2006) might be consistent in the field of essentialism and social constructionism. Additionally, Chao (2009) found that essentialists were more sensitive to trait differences (e.g., face) between races compared with social constructionists, who were less sensitive. Therefore, we expected that essentialists, compared with social constructionists, would be more likely to pay attention to trait-relevant information (e.g., personality, attitude) rather than context-relevant information (e.g., motives, emotional states) to construct a dispositional rather than dynamic representation of the actor when processing public event information and proposed the following:

Hypothesis 1a: An essentialist theory will be positively associated with a trait preference when processing information relative to certain public events.

Hypothesis 1b: A social constructionist theory will be positively associated with a context preference when processing information relative to certain public events.

Second, people with different lay theories choose different ways of expressing their opinions online when negative public events occur. It has been revealed that entity theorists responded more negatively toward moral transgression (Miller et al., 2007); made more rigid, rapid, and generalized social judgements about the target in negative terms (Erdley and Dweck, 1993; Gervey et al,, 1999); and recommended stronger punishments for criminal offenders (Tam et al., 2013). By contrast, incremental theorists highlighted people's changeable psychological states. These states were easily influenced by circumstances, and tended to be dynamic, temporary, and soft judgments (Dweck et al., 1995b; Levy et al., 1999) where individuals recommended less-severe punishments for the target who had exhibited immoral actions (Erdley et al., 1993; Gervey et al., 1999). Obviously, two styles of implicit theories lead to different behavior tendencies.

The essentialists emphasis on the deep and unobservable essence of social phenomena might eliminate room for human intervention; hence, nothing could be done except for showing anger and calling for severe punishments (Fischer and Roseman, 2007). By

contrast, social constructionists might expect the possibility of change and act with the intention promoting the existing situation. Therefore, we inferred that when a typically negative public event occurs, essentialists might intend to engage in polarized (e.g., aggressive, uncivil, biased) online expression and call for severe punishments, whereas social constructionists might intend to participate in rational (e.g., deliberative, problem-solving, responsibly) online expression and call for less severe punishments. We proposed the following:

Hypothesis 2a: An essentialist theory will be positively associated with a polarized way to express opinions online when a negative public event occurs.

Hypothesis 2b: A social constructionist theory will be positively associated with a rational way to express opinions online when negative public event occurs.

Finally, we are also interested in whether the information preferences of the two types of lay theorists produce the different styles of online opinion expression. This research proposed that essentialist theorists would be more inclined to search for and pay attention to "essential" information about the target individuals in certain phenomena; hence, they are more likely to take a gloomy view on problem-solving and engage in an expression of emotional venting. Conversely, social constructionist theorists would prefer to base their judgments on developmental information; thus, they are more likely to act in an optimistic manner to express their opinions. As such, the following hypotheses were proposed:

Hypothesis 3a: The effect of essentialist theory on polarized expression will be mediated through trait information preference in a positive direction.

Hypothesis 3b: The effect of social constructionist theory on rational expression will be mediated through context information preference in a positive direction.

2. Current Research

The main purpose of this research was to systematically explore the specific effects of the essentialist and social constructionist theories on polarized and rational ways of participating in online public opinion expression and the potential mediating effects of information preferences, especially when a negative social public event occurs.

The hypotheses were tested in two studies in which the participants were asked to read a concise transcript of a piece of fictitious negative public event news online and make judgments about the target individuals. We simulated a typical scenario of online public expression where users could read about specific news and receive others' viewpoints; then, we allowed the participants to express their viewpoints.

All the key variables were measured to explore the predicted model. In Study 1, this process was performed preliminarily through a cross-sectional survey. In Study 2, the two types of lay theories were primed to try to replicate the findings in Study 1.

3. Study 1

Study 1 aimed to test the hypothesized model in the context of a specific social public event in which public security was threatened. We expected the stable orientation of essentialism or social constructionism among the participants would be associated with different reactions after they read the information about the event, including the information preferences and opinion expression styles.

3.1 Method

3.1.1 Participants

The self-report online survey was completed by 128 participants who received ¥5 (about US$0.8) for their participation. The participants' age range was 18–50 years and 47.6% were females. Data from 16 participants were excluded for failing to pass the item for attention detection. Finally, 112 participants (61 males, 51 females) were included in analysis.

3.1.2 Measures

Lay theories of essentialism and social constructionism. We adapted a questionnaire that measured lay theories of racial essentialism and social constructionism created by No et al. (2008). There were 8 items: 4 measured essentialism (e.g., "It is very difficult to change one's group identity") and 4 measured social constructionism [e.g., "A lot of an individual's characteristics (disposition, ability and status) are rooted in his group so that they cannot be changed"]. The participants were then asked to indicate how they agreed with each item on a 6-point scale (1 = *totally not agree*, 6=*totally agree*). Cronbach's alpha for essentialism and social constructionism were.87 and.76, respectively.

Information preference. The participants were asked to read a piece of news that was fake but similar to a real one. The text is as follows: "On the 15th of June, one middle-aged man hurt three children with an axe at Dadongmen Kindergarten in Wuhan City. Two children were critically wounded and one was slightly wounded. The policemen arrived quickly and subdued a man with the surname Liu. The preliminary investigation found that Liu had been wandering near the gate before classes were over and had tried to get into the kindergarten, but his motive was still unknown."

After reading the news, the participants answered questions to assess whether they had understood the news. Next, they were asked to answer a 12-item measure of information preference that was self-developed. Six items measured trait preference

(e.g., "I want to know more about the personality of Liu") and the other six measured context preference ("I want to know more about what happened before Liu decided to do this"). Then, participants were asked to indicate how much they agreed with each item on a 6-point scale (1 = *totally not agree*, 6=*totally agree*). Cronbach's alpha for trait and context preference was.88 and.75, respectively.

Ways of online public opinion expression. After completing the information preference measure, participants were asked to read six comments about this event by netizens and answer how much they agreed with the opinions they read on a 7-point scale (1 = *totally not agree*, 7=*totally agree*). Three of them reacted in a polarized way (e.g., abusive, venting anger), for example, "It's hard to eliminate all the hate in my heart even though Liu would be under sentence of death, and I'm so angry that we don't have more severe punishments." The other three commented in a rational way (e.g., problem-solving, calling for the truth), for example, "We should adopt more-detailed and carefully protective measures to avoid this tragedy reemerging." Cronbach's alpha for polarized and rational reactions were.81 and.75, respectively.

Table 1. Correlations and Descriptive Statistics for the Variables in Study 1

	1	2	3	4	5	6	7
1. gender	—						
2. social constructionism	.08	—					
3. essentialism	.13	-.45***	—				
4. context preference	.12	.30**	.20*	—			
5. trait preference	.11	-.07	.39***	.28**	—		
6. polarized way	-.02	-.12	.25**	.09	.35***	—	
7. rational way	-.11	.32**	-.37***	.28**	.01	-.07	—
M	0.54	4.18	3.94	4.36	4.30	5.31	5.97
SD	0.50	0.82	1.01	0.70	0.83	1.25	0.99

Note. Gender was dummy-coded as 0 = *female* and 1 = *male*. *p <.05, **p<.01, ***p <.001.

3.2 Results

Table 1 shows the descriptive statistics and correlations of the variables in Study 1. To test the hypothesized model and take the covariance among variables, we conducted structural equation modeling that included all the variables we considered. After deleting the insignificant paths, the model reached a great fit, in which χ^2 =22.42, df=7, χ^2/df=3.20, p=.002, GFI=.94, NFI=.83, CFI=.87, RMSEA=.14 (0.78, 0.21), RMR=.08, TLI=.71, and IFI=.88.

In the model, the bootstrapped (5,000 times) unstandardized indirect effect of essentialism on polarized expression was b =.14 (SE =.08), and the 95% confidence interval, ranging from 0.025 to 0.322, did not include zero (p =.005); thus, trait preference totally mediated (in a positive direction) the effect of essentialism on polarized expression; moreover, essentialism could also be negatively associated with the rational way (b = -.43, p <.001). By contrast, the bootstrapped (5,000 times) unstandardized indirect effect of social constructionism on rational way was b =.13 (SE =.07), and the 95% confidence interval, ranging from 0.017 to 0.278, did not include zero (p =.019); thus, context preference totally mediated (in a positive direction) the effect of social constructionism on the rational way.
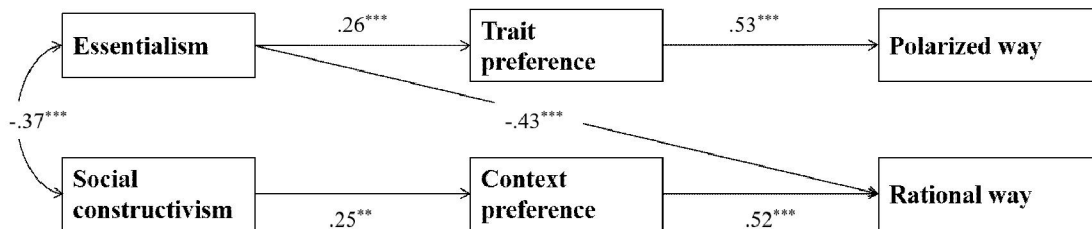

Figure 1. Structural equation model and unstandardized path coefficients in Study 1.
Note. ***p<.001, **p<.01.

3.3 Discussion

The findings in Study 1 indicated that people who hold different lay theories focus on different types of information when they process the materials of a certain social public event, and this results in people choosing different ways to express their opinions online. Specifically, when a public security event occurred, essentialist theorists would allocate more attention to the traits or personality of the suspect, that is inner and stable characteristics, and it was rather

difficult to change their views. As a result, they would attribute behaviors to unchangeable internal factors, and then vent their anger to just one person. By contrast, the social constructionist theorists allocated more attention to the context information and tended to make a situational attribution; thus, they were more inclined to explore various explanations and solutions.

The results of Study 1 were consistent with our predictions; however, the causal relationship among the variables was not tested. Because the lay theories could display as relatively stable, trait-like, measurable beliefs, as well as a state-like mental representation, which could be activated by theory-related stimuli, in the next study, lay theories are primed rather than self-reported.

4. Study 2

In Study 2, two types of lay theories were primed by a reading task to replicate the results from Study 1. We again provided the participants with a specific situation of a negative social public event to examine their information preferences and expressive styles online. It was expected that, compared with the participants primed with essentialist theory, those primed with social constructionist theory would allocate more attention to context information and intend to take expressive actions that were more rational and showed a higher propensity for forgiveness to those involved in the events.

4.1 Method

4.1.1 Participants

The self-reported online survey was completed by 180 participants who received ¥5 (about US$0.8) for their participation. The participants' age range was 18–40 years and 60.4% were females. Twenty-four participants failed to pass the item for attention detection, and their data were excluded. Finally, 156 participants (62 males, 94 females) were included in analysis: 76 participants in the essentialism condition and the remainder in the social constructionism condition.

4.1.2 Materials and Procedure

First, the participants were asked to read a detailed description comprising 1,500 words that explained research advancements regarding people's basic attributes. The material was adapted from Bergen (1991) and disguised as published papers from *Science Express*.

There were two versions. The purpose of Version one was to prime essentialism. This material explained that gender difference in aggression and kindness was mainly determined by genes; hence, changes in an individual's acquired environment would not be a significant influence. The purpose of Version two was to prime social constructionism. This material asserted that gender difference in aggression and kindness was

decided by acquired environment in 88%, that is, the demands on and cultivation of individuals in relation to their cultural environment would determine their gender roles and cause them to show aggression or kindness more obviously.

The participants were randomly allocated into two groups and then read one of the two versions. After reading, the participants were asked to answer three choice questions to determine if they had read the material carefully, including "There is a boy who has grown up in peaceable circumstances and a girl who has grown up in circumstances full of competition and aggression, which one would be more aggressive?" If the participants responded with two or more wrong answers, they would be regarded as not reading carefully and their data was excluded. After that, as a manipulation check, the participants were asked to complete the questionnaire about the two types of lay theories used in Study 1 (Cronbach's α=0.81 for essentialism, Cronbach's α=0.79 for social constructionism).

Next, the participants read a brief piece of fake news as follows: "In September, Gao harmed five passengers, two men and three women, with a knife on Shi Li Bridge. The cause remains in doubt. The wounded were sent to a hospital and one man died." After reading, the participants completed the information preference measure, which is the same as in Study 1 (Cronbach's alpha for trait and context preferences were.84 and.76, respectively).

Finally, the participants were asked to choose one favorite comment between two comments for releasing to a social network platform. The two comments were "The world is so terrible that it is appropriate to go out as little as possible" and "So many people have a mental illness nowadays and the government should do more to prevent mental disorders", representing the polarized and rational ways, respectively. Choosing the polarized or rational comment scored 0 and 1, respectively. At last, the participants were asked to indicate to what extent they would support severe punishment with three items (e.g., "We should amend the Criminal Law to have heavy sentences and penalties for criminals that commit offences") on a 6-point scale (1 = *totally not agree*, 6 = *totally agree*). Cronbach's alpha was.81. The higher the total score, the stronger approval of severe punishments.

4.2 Results

First, the manipulation check showed that the essentialism group (M = 3.92, SD = 0.84) had a significantly higher score than the social constructionism group (M =3.12, SD = 0.83; t (154) = 6.00, $p <.$ 001) in the essentialism measure items. Similarly, the score of the social constructionism items was significantly higher for the social constructionism group (M = 4.48, SD = 0.56) than for the essentialism

group (M =3.55, SD = 0.72; t (154) = 9.13, $p <$. 001).

Table 2. Correlations and Descriptive Statistics for Variables in Study 2

	1	2	3	4	5	6
1. gender	—					
2. lay theories (manipulated)	-.07	—				
3. trait preference	.05	-.17*	—			
4. context preference	-.11	.25**	-.33***	—		
5. comment choice	-.11	.26**	-.23**	.24**	—	
6. support for severe punishment	-.09	-.17*	.29***	-.26**	-.14	—
M	0.40	0.51	3.74	4.20	0.63	2.94
SD	0.49	0.50	0.91	0.73	0.48	0.99

Note. Lay theory was dummy-coded as 1 for *social constructionist theory* and 0 for *essentialist theory*. *p<.05, **p<.01, ***p<.001.

Table 2 reported the results of the descriptive statistics and correlations in Study 2. Next, exploiting the comment choice as the dependent variable, the results of the one-way ANOVA indicated that lay theories exerted a significant main effect (F (1, 153) = 10.75, p =.002, η_p^2 =.064). The participants in the social constructionism-primed group (M = 0.75, SD = 0.44) chose the more rational comments than those in the essentialism-primed group (M = 0.50, SD = 0.50).

Likewise, utilizing the support for severe punishment as another dependent variable, the results of the ANOVA demonstrated that individuals primed by essentialism (M = 3.11, SD = 0.95) tended to support more severe punishment for the target in the event than those who were primed by social constructionism (M = 2.77, SD = 1.00; F (1, 153) = 5.22, p =.024, η_p^2 =.033).

Finally, to test the potential mediating effect of information preference, a parallel multiple mediator model (Preacher and Hayes, 2008) was applied through the PROCESS macro (Model 4) for SPSS (Hayes, 2013). The analysis revealed that the mediating effect of trait preference and context preference were significant whether the dependent variable was comment choice or support for severe punishment (Table 3).

Table 3. Results of parallel multiple mediation analyses on lay theory and comment choice & support for severe punishment (5,000 bootstraps).

Independent variable IV	Mediators M	Dependent variable DV	Effect of IV on M (a)	Effect of M on DV (b)	Direct effect (c')	Indirect effect (a × b)	95% CI
lay theory (manipulated)	trait preference	comment choice	-.30(SE=.14)***	.24(SE=.09)***	.20(SE=.15)*	-.07	(-.19, -.01)
	context preference		.28(SE=.11)**	-.24(SE=.12)**	.20(SE=.15)*	-.07	(-.18, -.01)
lay theory (manipulated)	trait preference	support for severe punishment	-.30(SE=.15)***	.39(SE=.22)***	-.83(SE=.37)***	-.11	(.01,.46)
	context preference		.28(SE=.11)**	-.44(SE=.27)***	-.83(SE=.37)***	-.12	(.03,.40)

Note. Lay theory was also dummy-coded as 0 for *essentialist theory* and 1 for *social constructionist theory*. *p<.05, **p<.01, ***p<.001.

4.3 Discussion

A reading task primed lay theories in Study 2. As predicted, Study 2 again revealed, compared with the essentialist theory, the social constructionist theory was associated with a higher level of context preference rather than trait preference and results in more rational expression and less support for severe punishment. Again, the mediating effects of information preference were verified.

5. General Discussion

The idealized aim of democratic theorists, to some extent, is to have people participate in abundant civil discussions, resulting in the best possible decisions. However, there is evidence that the Internet has the potential to harm deliberative practices by the increasing incivility and opinion polarization during online discussions (Davis, 2009).

This research examined how potential information preferences may affect the opinion division in online public expression in view of essentialist versus social constructionist theories. Across two studies, we found that the lay theory shaped information processing and comment styles in online public opinion expression. Specifically, essentialism (stressing that social phenomena are rooted in fixed, inalterable essences) would drive individuals to allocate more attention to trait-relevant information and then engage in a polarized expression, whereas social constructionism (underling that social reality is constructed, malleable and arbitrary) would orient individuals to allocate more attention to context-relevant information and then engage in a rational expression.

First, our findings provide a useful and novel explanation for online opinion division. Two styles of lay theories about social phenomena implicitly promote people to process information and make decisions in a different fashion when expressing public opinions online. Essentialist theorists, who believe in the fixity of social phenomena regarding social categories as reflection of distinction about the nature of humans, tend to evaluate and diagnose static qualities of people, resulting in a pessimistic view of change and resolution. Consequently, they participate in online public expression for emotional release. By contrast, social constructionist theorists, who are willing to focus on dynamic processes and complex reasons that underlie social reality as well as a person's behavior, tend to engage in civil discourse and express in deliberation.

Second, our findings also illuminate the role of media in opinion polarization. Because individuals who were exposed to online uncivil exchanges about political debate would perceive the political polarization of the general public as more extreme (Hwang et al., 2014) and this study suggests that a trait-relevant information preference leads to uncivil discourse, it might be valid to present and emphasize more context rather than trait information in media reports of negative social public events.

Finally, the limitations of this study should be considered. The target events in this study are negative events. As we believe that negative events are more likely to promote distinct and extreme opinions, future research could investigate whether the effect found in expression about negative events also exists around positive or neutral public events. Additionally, this research only studies expression styles in cyberspace while ignoring other action choices by which netizens participate in social public affairs online, such as interacting with groups holding similar views, launching online collective actions, directly voicing demands to official accounts, or criticizing government policy (called online political participation) (Chen and Chan, 2017). These actions reflect the social-ecological reality of online social public event participation and deserve future attention. Finally, this study focused on the mediating role of information preference only, other potential mediators (e.g., emotions, goals) could be explored.

Conflicts of interest:
None.

Corresponding Author：
Wang Yachao
Faculty of Psychology
Beijing Normal University
Beijing 100875, China
Telephone: 13269676700
E-mail: ivenjiantong@126.com

References
1. Balnaves, M., and Caputi, P. (1993). Corporate constructs: To what extent are personal constructs personal? *International Journal of Personal Construct Psychology*,2, 119-138.
2. Bastian, B., and Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *Journal of Experimental Social Psychology*, 2, 228-235.
3. Bergen, R. S. (1991). Beliefs about Intelligence and Achievement-Related Behaviors. Dissertation thesis, University of Illinois at Urbana-Champaign, Champaign, IL.
4. Brunsting, S., and Postmes, T. (2002). Social movement participation in the digital age: Predicting offline and online collective action. *Small Group Research*, 5, 525-554.
5. Camaj, L., and Santana, A. D. (2015). Political Deliberation on Facebook during Electoral Campaigns: Exploring the Relevance of Moderator's Technical Role and Political Ideology. *Journal of Information Technology & Politics*, 4, 325-341.
6. Chao, M. M. (2009). Essentializing race: Its implication to social categorization and racial perception. Doctoral dissertation, University of Illinois at Urbana–Champaign, Champaign, IL.
7. Chen, Z., and Chan, M. (2017). Motivations for Social Media Use and Impact on Political Participation in China: A Cognitive and Communication Mediation Approach. *Cyberpsychology, Behavior, and Social Networking*, 2, 83-90.
8. Chiu, C. Y., Hong, Y. Y., and Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology*, 1, 19-30.
9. Cicchirillo, V., Hmielowski, J., and Hutchens, M. (2015). The Mainstreaming of Verbally Aggressive Online Political Behaviors. *Cyberpsychology Behavior & Social Networking*, 5, 253-259.
10. Davis, R. (2009). Typing politics: The role of blogs in American politics. New York, NY: Oxford University Press.
11. DeLamater, J. D., and Hyde, J. S. (1998). Essentialism vs. social constructionism in the study of human sexuality. *The Journal of Sex Research*, 1, 10-18.

12. Dong, Y., and Chen, X. (2015). From Polarization to Rationality: The Evolution Path of Public Opinion on the Internet, Enlightenment from the Case of "PX Entry Battle" on Baidu Encyclopedia. *Journal of Public Management*, 02, 55-67.

13. Durrheim, K. (1997). Social constructionism, discourse, and psychology. *South African Journal of Psychology*, 3, 175-182.

14. Dweck, C. S., Chiu, C. Y., and Hong, Y. Y. (1995a). Implicit theories: elaboration and extension of the model. *Psychological Inquiry*, 4, 322-333.

15. Dweck, C. S., Chiu, C. Y., and Hong, Y. Y. (1995b). Implicit Theories and Their Role in Judgments and Reactions: A World from Two Perspectives. *Psychological Inquiry*, 4, 267-285.

16. Dweck, C. S., Hong, Y. Y., and Chiu, C. Y. (1993). Implicit Theories: Individual Differences in the Likelihood and Meaning of Dispositional Inference. *Personality and Social Psychology Bulletin*, 5, 644-656.

17. Erdley, C. A., and Dweck, C. S. (1993). Children's Implicit Personality Theories as Predictors of Their Social Judgments. *Child development*, 3, 863-878.

18. Fairchild, H. H., Yee, A. H., Wyatt, G. E., and Weizmann, F. M. (1995). Readdressing psychology's problems with race. *American Psychologist*, 50, 46-47.

19. Fenoll, V., and Cano-Oron, L. (2017). Citizen engagement on Spanish political parties' Facebook pages: Analysis of the 2015 electoral campaign comments. Communication and Society-Spain, 4, 131-147.

20. Fischer, A. H., and Roseman, I. J. (2007). Beat Them or Ban Them: The Characteristics and Social Functions of Anger and Contempt, *Journal of personality and social psychology*, 1, 103-115.

21. Garcia, D., Mendez, F., Serdült, U., and Schweitzer, F. (2012). Political polarization and popularity in online participatory media: an integrated approach. Edition Workshop on Politics, Elections and Data, 7204, 3-10.

22. Gelman, S. A. (2003). The essential child: origins of essentialism in everyday thought. Oxford, England: Oxford University Press.

23. Gervey, B. M., Chiu, C., Hong, Y., and Dweck, C. S. (1999). Differential Use of Person Information in Decisions about Guilt versus Innocence: The Role of Implicit Theories. *Personality and Social Psychology Bulletin*, 1, 17-27.

24. Gil-White, F. (2001). Are ethnic groups biological species to the human brain? Essentialism in human cognition of some social groups. *Current Anthropology*, 42, 515-554.

25. Halpern, D., and Gibbs, J. (2013). Social media as a catalyst for online deliberation? Exploring the affordances of Facebook and YouTube for political expression. *Computers in Human Behavior*, 3, 1159-1168.

26. Hanna, A., Wells, C., Maurer, P., Friedland, L., and Shah, D. (2013). Partisan alignments and political polarization online: a computational approach to understanding the French and US presidential elections. The Workshop on Politics, Elections and Data, 15-22.

27. Haslam, N., Bastian, B., Bain, P., and Kashima, Y. (2006). Psychological Essentialism, Implicit Theories, and Intergroup Relations. *Group Processes & Intergroup Relations*, 1, 63-76.

28. Haslam, N., and Levy, S. R. (2006). Essentialist beliefs about homosexuality: Structure and implications for prejudice. *Personality and Social Psychology Bulletin*, 4, 471-485.

29. Haslam, N., Rothschild, L., and Ernst, D. (2000). Essentialist beliefs about social categories. *British Journal of Social Psychology*, 1, 113-127.

30. Haslam, N., Rothschild, L., and Ernst, D. (2002). Are essentialist beliefs associated with prejudice? *British Journal of Social Psychology*, 1, 87-100.

31. Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York: Guilford Press.

32. Hirschfeld, L. A. (1998). Race in the making: Cognition, culture, and the child's construction of human kinds. Cambridge: MIT Press.

33. Hong, Y. Y., Chan, G., Chiu, C. Y., Wong, R., Hansen, I. G., and Lee, S. L., et al. (2003). How are social identities linked to self-conception and intergroup orientation? The moderating effect of implicit theories. *Journal of Personality and Social Psychology*, 6, 1147-1160.

34. Hong, Y. Y., Chiu, C. Y., Dweck, C. S., and Sacks, R. (1997). Implicit theories and evaluative processes in person cognition. *Journal of Experimental Social Psychology*, 3, 296-323.

35. Hong, Y. Y., Levy, S. R., and Chiu, C. Y. (2001). The contribution of the lay theories approach to the study of groups. *Personality and Social Psychology Review*, 2, 98-106.

36. Hong, Y., Chao, M. M., and No, S. (2009). Dynamic Interracial/Intercultural Processes: The Role of Lay Theories of Race. *Journal of Personality*, 5, 1283-1310.

37. Huang, N., Zuo, S., Wang, F., Cai, P., and Wang, F. (2017). The Dark Side of Malleability: Incremental Theory Promotes Immoral Behaviors. *Frontiers in Psychology*, 8.

38. Hughes, J. S. (2015). Support for the domain specificity of implicit beliefs about persons, intelligence, and morality. *Personality and Individual Differences*, 86, 195-203.

39. Hwang, H., Kim, Y., and Huh, C. U. (2014). Seeing is Believing: Effects of Uncivil Online Debate on Political Polarization and Expectations of Deliberation, *Journal of Broadcasting & Electronic Media*, 4, 621-633.

40. Irvine, J. M. (1990). Disorders of desire: Sex and gender in modern American sexology (Vol. 49). Philadelphia: Temple University Press.

41. Koban, K., Stein, J., Eckhardt, V., Ohler, P. (2018). Quid pro quo in Web 2.0. Connecting personality traits and Facebook usage intensity to uncivil commenting intentions in public online discussions. *Computers in Human Behavior*, 79, 9-18.

42. Lapidot-Lefler, N., and Barak, A. (2012). Effects of anonymity, invisibility, and lack of eye-contact on toxic online disinhibition. *Computers in Human Behavior*, 28(2), 434-443.

43. Levy, S. R., Chiu, C. Y., and Hong, Y. Y. (2006). Lay theories and intergroup relations. *Group Processes & Intergroup Relations*, 1, 5-24.

44. Levy, S. R., Plaks, J. E., and Dweck, C. S. (1999). "Modes of social thought: Implicit theories and social understanding", in Dual process theories in social psychology, eds S. Chaiken and Y. Trope (New York: Guilford Press), 179-202.

45. Mahalingam, R. (2003). Essentialism, culture, and beliefs about gender among the Aravanis of Tamil Nadu, India. *Sex Roles*, 49, 489-496.

46. McConnell, A. R. (2001). Implicit Theories: Consequences for Social Judgments of Individuals. *Journal of Experimental Social Psychology*, 3, 215-227.

47. Medin, D. L., and Ortony, A. (1989). "Psychological essentialism", in Similarity and analogical reasoning, eds S. Vosniadou, and A. Ortony (New York: Cambridge University Press), 179-195.

48. Miller, C. H., Burgoon, J. K., and Hall, J. R. (2007). The effects of implicit theories of moral character on affective reactions to moral transgressions. *Social Cognition*, 6, 819-832.

49. Molden, D. C., and Dweck, C. S. (2006). Finding "Meaning" in Psychology: A Lay Theories Approach to Self-Regulation, Social Perception, and Social Development. *The American psychologist*, 3, 192-203.

50. No, S., Hong, Y. Y., Liao, H. Y., Lee, K., Wood, D., and Chao, M. M. (2008). Lay theory of race affects and moderates Asian Americans' responses toward American culture. *Journal of Personality and Social Psychology*, 4, 991-1004.

51. Papacharissi, Z. (2016). Democracy online: civility, politeness, and the democratic potential of online political discussion groups. *New Media & Society*, 2, 259-283.

52. Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891.

53. Qiu, L., Lin, H., Chiu, C., and Liu, P. (2015). Online Collective Behaviors in China: Dimensions and Motivations. *Analyses of Social Issues and Public Policy*, 1, 44-68.

54. Ridings, C., and Wasko, M. (2010). Online discussion group sustainability: Investigating the interplay between structural dynamics and social dynamics over time, *Journal of the association for Information systems*, 2, 95-120.

55. Rothbart, M., and Taylor, M. (1992). "Category labels and social reality: Do we view social categories as natural kinds?", in Language, interaction and social cognition, eds G. R. Semin and K. Fiedler (Thousand Oaks, CA: Sage Publications), 11–36.

56. Sayer, A. (2008). Essentialism, Social Constructionism, and beyond. *Sociological Review*, 3, 453-487.

57. Tam, K., Shu, T., Ng, H. K., and Tong, Y. (2013). Belief about immutability of moral character and punitiveness toward criminal offenders. *Journal of Applied Social Psychology*, 3, 603-611.

58. Wu, S., and Zhang, B. (2015). Research Review of Group Polarization of Online Public Opinion. Journal of Chongqing Technology and Business University (Social Sciences Edition), 3, 85-88.

59. Yang, J., and Lin, L. (2012). Research Review of Online Group Polarization in China. *Journal of Southwest Minzu University (Humanities and Social Science Edition)*, 11, 157-161.

60. Yzerbyt, V., Judd, C. M., and Corneille, O. (2004). The psychology of group perception: perceived variability, entitativity, and essentialism. New York: Psychology Press.

61. Zuckerman, M. (1990). Some dubious premises in research and theory on racial differences: Scientific, social, and ethical issues. *American Psychologist*., 45, 1297–1303.

4/25/2018