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態度一致性與情緒喚起對線上謠言判斷之影響

Impacts of attitudinal congruence and emotional arousal on  
evaluation of online rumor

陳柏臻

Po-Chen Chen


指導教授：吳玲玲 博士

Advisor: Ling-Ling Wu, Ph.D.

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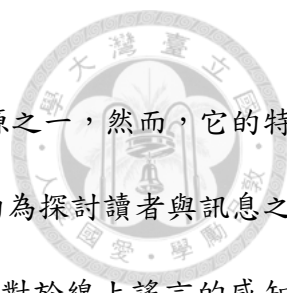
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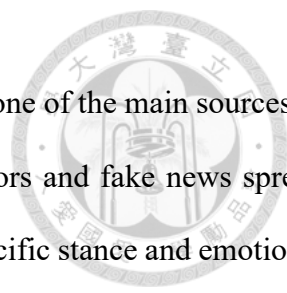
## 中文摘要



隨著社群媒體的普及，社群媒體已經成為新聞最主要的來源之一，然而，它的特性也讓謠言、假新聞比以往傳播的更快、更遠。本研究的主要目的為探討讀者與訊息之間的態度一致性與訊息的情緒喚起程度如何影響社群平台使用者對於線上謠言的感知可信度和分享意圖。我們希望透過此研究，釐清態度一致性與情緒喚起對於線上謠言判斷的影響，並了解是什麼樣心理特質的人容易受到這些因素所影響。在過去的研究中發現，人們傾向於選擇閱讀與自己有著相同立場的訊息，學者認為這是基於確認偏誤（confirmation bias）所產生的現象。在本研究中我們推測，人們對於線上謠言的感知可信度和分享意圖也會受到確認偏誤的影響，當人們與訊息的態度一致性越高，感知可信度和分享意圖也會越高。我們也推測這樣的現象對於認知閉合需求（need for cognitive closure）高的人會更加明顯。另一方面，情緒喚起（emotional arousal）是媒體常用來吸引讀者的策略，高情緒喚起的媒體在網路上有更強的傳播力。因此我們推測，當線上謠言的情緒喚起程度越高，人們的感知可信度和分享意圖也會越高。另外我們也推測這樣的效果對於情緒感染易感性（susceptibility to emotional contagion）高的人會更強。本研究採用實驗法來驗證我們的假設，實驗一的結果顯示，態度一致性越高，感知可信度和分享意圖也會越高，而且認知閉合需求高的人在高態度一致性時會比認知閉合需求低的人產生更高的感知可信度。實驗二的結果則顯示，情緒喚起對於感知可信度和分享意圖並沒有顯著的影響，這樣的結果並不符合我們的假設，因此在內文中我們也會針對這個現象來做解釋。

**關鍵字：**線上謠言，態度一致性，情緒喚起，認知閉合需求，情緒感染易感性，感知可信度，分享意圖

## ABSTRACT



With the popularity of social media, social media have become one of the main sources of news. However, the characteristics of social platforms also let rumors and fake news spread faster and farther. Online rumors and fake news often edited with specific stance and emotional writing style. Individuals' judgements of messages may be affected by the consistency between their prior attitudes and messages stances toward the issue, namely attitudinal congruence between individual and message. The emotional arousal of messages, that is, the degree of which messages trigger individuals' emotion, may also affected individual's judgements of messages. The main purpose of this paper is to investigate the effect of attitudinal congruence between readers and messages and the effect of emotional arousal of messages on readers' perceived credibility and sharing intention. Several researchers find people tend to exposure to attitude-consistent news, we proposed that people's credibility evaluation and sharing intention of online messages would show similar phenomenon because of attitudinal congruence between people and messages. Additionally, we proposed need for cognitive closure as a moderator on the effect of attitudinal congruence. Moreover, we proposed that people tend to trust and share online rumor with high level of emotional arousal. We also proposed that people with high susceptibility to emotional contagion would be affected by emotional arousal more greatly. We adopted experimental method to test our hypotheses. The empirical results show that under high attitudinal congruence condition, perceived credibility and share intention were higher, and the effect of attitudinal congruence on perceived credibility would be stronger for high need for cognitive closure people. Unexpectedly, we find emotional arousal did not affect both perceived credibility and share intention, we have explained these results in this paper.

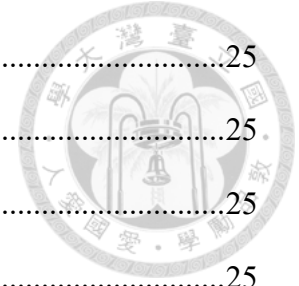
*Keywords: online rumor, attitudinal congruence, emotional arousal, need for cognitive closure, susceptibility to emotional contagion, perceived credibility, intention to share*

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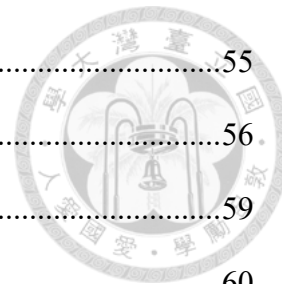


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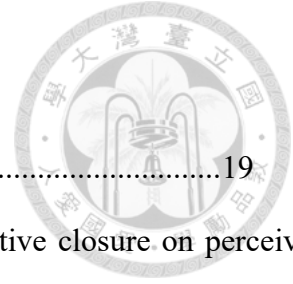


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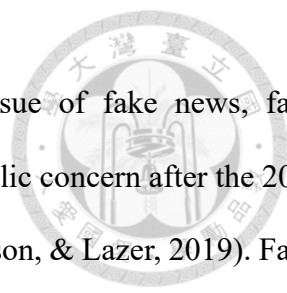


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# Chapter 1 Introduction



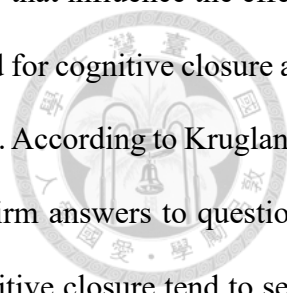
Fake news has been a long-standing problem. However, issue of fake news, false information, and rumors spreading on social media have become public concern after the 2016 US presidential election (Grinberg, Joseph, Friedland, Swire-Thompson, & Lazer, 2019). False information is also a serious problem in Taiwan. According to the recent investigation report, Taiwan is the country attacked most frequently by false information from foreign governments in the world (Lührmann & Lindberg, 2019). Moreover, 89% of Taiwanese read online news, and 58% of them get news on social platforms such as Facebook and Line (Newman, Fletcher, Kalogeropoulos, & Nielsen, 2019). On social platforms, people can generate and share content easily without fact-checking system and editorial judgment, so the problem of false information is now out of control (Allcott & Gentzkow, 2017). It is surprising that false information even diffused significantly farther, faster, deeper, and more broadly than true information, and these effects were more pronounced for political than other categories of news (Vosoughi, Roy, & Aral, 2018).

Due to the above reasons, many studies have focused on online users' evaluation of credibility and sharing behavior on social media. According to Shin, Jian, Driscoll, and Bar (2018), false information is often produced and spread by partisan media. These partisan media often repackage old rumors into partisan news to attract people who have the same stance with them. Theoretically, social media let users exposed to wide-ranging assortment of information and diverse opinion online. In fact, homophily in friend networks and algorithm for personal recommendation form the filter-bubble which make the effect of ideological polarization in information consumption seems to become more apparent on social media (Bakshy, Messing, & Adamic, 2015; Stroud, 2010). People received the attitude-consistent information more often, and People may trust the online contents which are high attitudinal congruence with their pre-existing attitude and share them to their friends on social media (Kim, 2015; Metzger, Hartsell,

& Flanagin, 2015). This circumstance may lead echo-chamber to become a breeding ground for false information.

Emotion had been found as another factor of online information evaluation and propagation. Social media users may evaluate online information through affect heuristic and their attitude would be highly susceptible to emotional (Slovic, Finucane, Peters, & Macgregor, 2007). Furthermore, people may be more likely to share high emotional arousing contents with others (Peters, Kashima, & Clark, 2009). Vosoughi et al. (2018) also proposed emotion as an explanation for why false news are spread faster and further than true news. They found that false stories make people feel fear, disgust, and surprise. These arousing emotions activate individuals' attentional processes (Storbeck & Clore, 2008). Indeed, purposeful false information often use exaggerating words and vivid images to attract readers' attention and even desire to manipulate readers' emotions (Chen, Conroy, & Rubin, 2015). Hasell and Weeks (2016) found that partisan news media often use emotional writing style to make their readers become angry with the opposing party. The manipulation of emotion may not only influence individuals' evaluation of information but also stir up divisions and reinforce ideological polarization on social media. Such a media environment let false information appear more frequently and threatens our society.

In the wake of fake news had become a hot topic, some asserted that there were many people spreading false information on social media. However, Grinberg et al. (2019) suggested that sharing false information may be a rare behavior on social platform. Only 0.1% of individuals accounted for nearly 80% of fake news sources shared. It seems necessary to conduct research studies to find what kind of people believe and share false information. There is now much evidence to support that both attitudinal congruence and emotional arousal play an important role in information processing (Kim, 2015; Metzger et al., 2015; Peters et al., 2009; Slovic et al., 2007). But there are very few studies of which kind of people would be more influenced by attitudinal congruence and emotional arousal.



Individuals' psychological characteristic may be a critical factor that influence the effects of attitudinal congruence and emotional arousal. The concepts of need for cognitive closure and susceptibility to emotional contagion could offer explanations for that. According to Kruglanski (1990), need for cognitive closure refers to individuals' desire for firm answers to questions, and aversion toward ambiguity. Individuals have high need for cognitive closure tend to seize quickly on information, and desire to maintain their beliefs as long as possible (Kruglanski & Webster, 1996). Therefore, people with high need for cognitive closure may desire to maintain their pre-existing attitude and trust the attitude-consistent information without any hesitation. Hatfield, Cacioppo, and Rapson (1993) defined emotional contagion as the convergence of individual's emotional state with the emotional states of others. The concept of susceptibility to emotional contagion refers to individual differences in susceptibility to emotional contagion (Doherty, 1997). People with high susceptibility to emotional contagion could more likely to catch others' emotions and more sensitive to arousing contents.

The purpose of this research is to investigate questions as follow. First, do attitudinal congruence and emotional arousal affect individuals' perceived credibility and intention to share online rumor? Second, does different degree of need for cognitive closure of readers moderate the relationship between attitudinal congruence and dependent variables? Finally, does different degree of susceptibility to emotional contagion of readers moderate the relationship between emotional arousal and dependent variables? We present the literature review in Chapter 2, and the research methodology and results of two separate empirical studies present in Chapter 3 and Chapter 4 . Chapter 5 offers the conclusion, implications, limitations, and future research. The result of this study would help people to understand the power of partisan and exaggerating online information. In addition to know what kinds of people will be more likely deceived by false information and become an accomplice to spread false information.

## Chapter 2 Literature Review

### 2.1 Attitudinal congruence

#### 2.1.1 The effect of attitudinal congruence

Media users tend to expose themselves to mass communications in accord with their pre-existing attitude (Klapper, 1960). According to Stroud (2008), people prefer attitude-consistent information rather than information which challenge their view point, which so called selective exposure. For example, voters tended to exposure to news which support their favor candidates (Knobloch-Westerwick, Johnson, & Westerwick, 2015). Several researchers explain the effect by confirmation bias (Spohr, 2017; Westerwick, Kleinman, & Knobloch-Westerwick, 2013). According to Nickerson (1998), confirmation bias means “the seeking or interpreting of evidence in ways that are partial to existing beliefs, expectations, or a hypothesis in hand”. Festinger (1962) suggested that information which challenges individual’s views make them feel discomfort because of inconsistent cognitions. Such cognitive dissonance motivates individuals to avoid attitude-inconsistent information. The confirmation bias can be explained by the theory of cognitive dissonance, people prefer the information which match their prior beliefs rather than which inconsistent with their prior beliefs to minimize psychological discomfort.

In Internet era, diverse options of information were expected to expose people to different viewpoints and learn more about unfamiliar perspectives (Stromer-Galley, 2003). However, algorithm seems to foster selective exposure on social platform and search engine. Echo chamber and ideological polarization make people receive the same perspective information more frequently (Bakshy et al., 2015; Spohr, 2017). According to Törnberg (2018), the viral spread of false information is a kind of complex contagion. Social media users’ judgement of information would be affected by the members of their social network. In order to further understand information processing behavior of individual level, we hope to know what factors



affect individuals' information processing. How do people judge whether information is credible and whether they should share it or not have become important research topics to shed light on dissemination of false information on social media.

Credibility is defined as the extent to which people perceive information as believable, true, or factual (M. Y. Cheung, Luo, Sia, & Chen, 2009). Volume of information on social media makes people rarely engage in effortful information evaluation tasks, they likely evaluate credibility through cognitive heuristics (Fogg et al., 2003). Self-confirmation heuristic is a kind of heuristic through confirmation bias, it not only affects individuals' willingness to expose to information but also affects credibility judgments. Metzger and Flanagin (2013) noted that "there is a tendency for people to view information as credible if it confirms their preexisting beliefs and not credible if it counters their existing beliefs, regardless of how well-argued, duly researched, appropriately sourced, and so on." Therefore, people may tend to accept and trust the attitude-consistent messages, which so-called the condition of high attitudinal congruence between readers and messages, and resist to accept and trust the messages which have difference stance toward the issue with their prior attitude, namely the condition of low attitudinal congruence between readers and messages.

Moreover, people can share news, rumors or memes with their friends on social media, which could cause the spreading of false information (Vosoughi et al., 2018). Attitudinal congruence between reader and information may influence the intention to share information. Intention to share is defined as the propensity to disseminate information (So & Bolloju, 2005). Several researchers have studied why online users sharing information, socializing, status seeking and knowledge sharing were found as an important motivation to share online news (Lee & Ma, 2012; Thompson, Wang, & Daya, 2019). Constant, Kiesler, and Sproull (1994) suggested that social beliefs and self-expression also influence attitudes toward information sharing. In fact, self-expression has been studied as a major motivational factor for using social media (Ellison, Steinfield, & Lampe, 2007). Sharing online information is both a means of

information amplification and self-expression. People present their opinion or attitude by sharing information which supports their pre-existing attitude toward certain issue (Hasell & Weeks, 2016). Therefore, people may more likely to share the information which is high attitudinal congruence with them on social media. According to the previous inference, we propose the following hypothesis:

**H1a:** *High attitudinal congruence between individual and information will generate higher perceived credibility than low attitudinal congruence condition.*

**H1b:** *High attitudinal congruence between individual and information will generate higher intention to share than low attitudinal congruence condition.*

### 2.1.2 The moderating effect of need for cognitive closure

The theory of need for closure was introduced by Kruglanski (1990) to explain the cognitive–motivational aspects of judgement making. According to Kruglanski (1990), need for cognitive closure was defined as an individual's desire for a firm answer on a given topic and an aversion toward confusion and ambiguity. Webster and Kruglanski (1994) noted that “Such need was referred to as nonspecific and was contrasted with needs for specific closure.”

Situational forces such as time pressure can influence the individuals’ need for cognitive closure, but individuals still show differences in their need for cognitive closure levels (Webster & Kruglanski, 1994). Individuals with different level of need for cognitive closure may have different behavior during information processing. People with high need for cognitive closure will perform two tendencies, one is urgency tendency which means individual tend to attain closure as soon as possible; the other is permanence tendency which means individual tend to maintain their closure state for as long as possible. In other words, individuals with high need for cognitive closure tend to seize information quickly and to freeze on acquired knowledge. (Kruglanski & Webster, 1996).

Therefore, to attain cognitive closure, people with high need for cognitive closure more likely to use heuristic cues and readily available information for decision making (Roets, Kruglanski, Kossowska, Pierro, & Hong, 2015). They also make decision quickly by general knowledge and unwilling to accept other exception. On the other hand, people with low need for cognitive closure may enjoy uncertainty and willing to think if there are possibilities that contrary to their pre-existing belief (Vermeir & Van Kenhove, 2005). Given these points, individuals' need for cognitive closure may moderate the effect of attitudinal congruence on perceived credibility and intention to share. People with high need for cognitive closure may more likely to adhere to their pre-existing attitude and resist the perspective which challenge their viewpoints. That is, high level of need for cognitive closure may enhance the confirmation bias. Furthermore, because they tend to stick their point of view, they may more likely to present their viewpoint to others by sharing behavior. Based on the above inference, we propose the following hypothesis:

**H2a:** *Need for cognitive closure moderates the relationship between attitudinal congruence and perceived credibility. The effect of attitudinal congruence will be stronger for individuals with high need for cognitive closure than for individuals with low need for cognitive closure.*

**H2b:** *Need for cognitive closure moderates the relationship between attitudinal congruence and intention to share. The effect of attitudinal congruence will be stronger for individuals with high need for cognitive closure than for individuals with low need for cognitive closure.*

## **2.2 Emotional arousal**

### **2.2.1 The effect of emotional arousal**

According to Bakir and McStay (2018), false information on social media is often deliberately affective, partisan media and content farms grab people's attention by exaggerating words and vivid images (Chen et al., 2015). Arousing individuals' emotion is an effective



strategy to attract attention, manipulate emotion and even influence public opinion. Therefore, we will clarify the effect of emotional arousal on information processing and review related literatures as below.

Almost all emotion frameworks include dimensions of valence dimension and arousal dimension (Lang, Dhillon, & Dong, 1995; Russell, 1980). Lang et al. (1995) have noted that “The valence dimension is conceptualized as a continuous affective response ranging from pleasant (or positive) to unpleasant (or negative). The arousal dimension is defined as a continuous response ranging from energized, excited, and alert to calm, drowsy, or peaceful”. On the other hand, Mehrabian and Russell (1974) suggested that pleasure, arousal and dominance are three independent emotional dimensions which describe people’s state of emotion. In the study of the relation between emotion and sharing behavior, Berger (2011) suggested that arousal can plausibly explain sharing of information regardless of emotional valence. According to Russell (1980), arousal is a psychological concept which influence individuals’ emotion by activation of sympathetic nervous system, autonomic nervous system, or endocrine system. Arousal is a psychological concept which describing the state of feeling along a single dimension which can defined by adjectives such as relaxed-stimulated, calm-excited and sleepy-awake. (Mehrabian & Russell, 1974; Russell, 1980). Moreover, it may influence the information processing. Online readers often evaluate information based on their emotion. Slovic et al. (2007) suggested that affective responses occur rapidly and automatically. People sense the feeling and evaluate it quickly when they encounter the emotional information. For example, people can evaluate information by emotional valence, positive feeling often leads people to positive evaluation and negative feeling to negative evaluation. Emotional arousal could also provide information about the importance or personal relevance of information. People may evaluate something more important and their feeling about it will be intensified (Storbeck & Clore, 2008).

Many researchers believe that emotional arousal would affect individuals’ evaluation and

behavior of online information. Kircanski et al. (2018) found that customers would more likely to trust the misleading advertisements which can arouse their emotions and even increase their willingness to purchase. Lang et al. (1995) found that arousing contents can be remembered better than calm contents on television. Dillard and Nabi (2006) suggested that arouse individuals' emotion can increase the effectiveness of persuasive messages about cancer prevention and detection. Emotional arousal may not only intensify individuals' feeling but also make them empathetic to stories. According to Håkansson and Montgomery (2003), when people feel empathy, they will gain additional credibility. Therefore, we proposed that people may feel more credibility when they encounter messages which arouse their emotion.

Peters et al. (2009) suggested that people may be more likely to share high emotional arousal stories. Berger and Milkman (2012) found that the virality of online content is partly driven by emotional arousal. Online content which evokes high-arousal emotion is more viral than that evokes low-arousal emotion. Vosoughi et al. (2018) suggested that readers' emotional reactivities to false news are more fear, disgust, and surprise than to true news. Fear, disgust, and surprise are high arousing emotion based on circumplex model of affect (Russell, 1980). People may feel arousing messages more important and urgent, which could be a reason to explain why they tend to share information which arousing their emotion. People share the information which is important or urgent to their friends because of altruism. They expect the information they shared can offer new knowledge or useful information to help their friends (C. M. K. Cheung & Lee, 2012). In another point of view, arousing words or images could intensify the emotion of message. This effect let people can present their attitude or ideologic more powerful by sharing these messages. Thus, when the emotional arousal extent of message is high, people may have higher intention to share the information on social media. According to the previous inference, we propose the following hypothesis:

**H3a:** *High emotional arousal of information will generate higher perceived credibility than low emotional arousal condition.*

**H3b:** *High emotional arousal of information will generate higher intention to share than low emotional arousal condition.*



### 2.2.2 The moderating effect of susceptibility to emotional contagion

Although emotion may influence individuals' information evaluation and behavior, individual difference on susceptibility to emotional contagion may cause different extent of emotional impact they feel. Hence, effect of emotional arousal on perceived credibility and intention to share may be moderated by susceptibility to emotional contagion. We will clarify the concept of susceptibility to emotional contagion and individual difference on it as below.

According to Hatfield et al. (1993), emotional contagion is defined as “a tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally”. That is, when people read online news or rumor, they may experience the same emotions as the people in the stories, which is the effect of emotion arousal as mentioned previously. However, people may have different degree of susceptibility to emotion contagion because of their genetics, gender, early experience, and personality characteristic (Doherty, 1997). According to Hatfield et al. (1993), people with high susceptibility to emotion contagion are more likely to make sense of others' emotional expressions. They also construe themselves as interrelated with others rather than independent and unique, so they often pay close attention to others. When they catch others' emotion, they tend to automatically and continuously mimic and synchronize their facial-expressions, voices, postures, movements, and instrumental behaviors of people whom they are interacting with. Additionally, their emotional memories which store their past experience are easily aroused by others' emotion expressions.

Given these aforementioned facts, we can expect that people with high susceptibility to emotion contagion will be affected more by emotional arousing contents. When they receive an arousal story, they may be empathetic to it, get a vicarious emotion, and trust it easily. That is,

the effect of emotional arousal on perceived credibility and intention to share may be moderated by susceptibility to emotion contagion. Based on the above inference, we propose the following hypothesis:

**H4a:** *Susceptibility to emotional contagion moderates the relationship between emotional arousal of information and perceived credibility. The effect of emotional arousal of information will be stronger for individuals with high susceptibility to emotional contagion than for individuals with low susceptibility to emotional contagion.*

**H4b:** *Susceptibility to emotional contagion moderates the relationship between emotional arousal of information and intention to share. The effect of emotional arousal of information will be stronger for individuals with high susceptibility to emotional contagion than for individuals with low susceptibility to emotional contagion.*

## 2.3 Research model

The framework we proposed in the entirety of Chapter 2 can be presented in Figure 2-1.

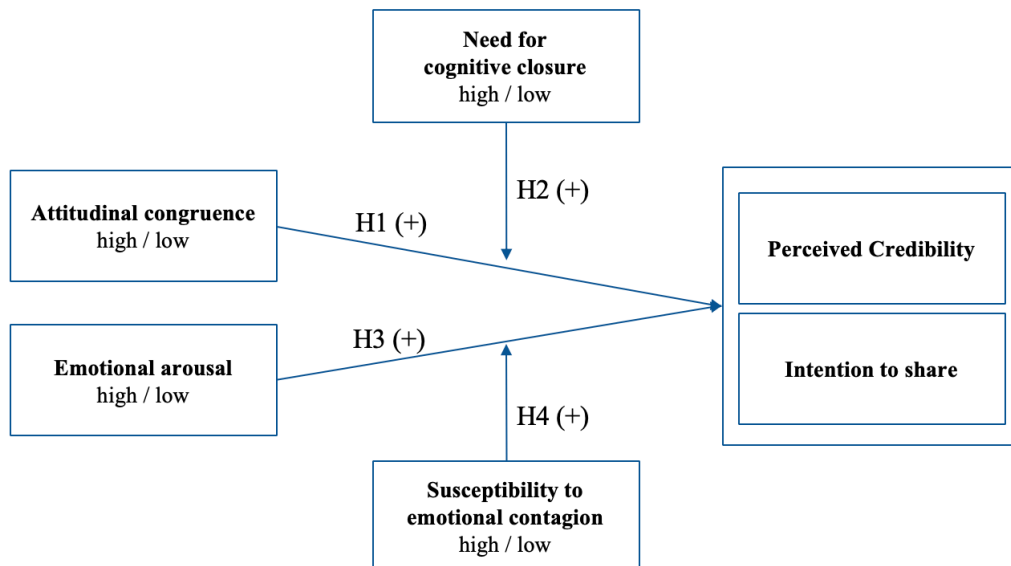


Figure 2-1 The proposed framework of the research

# Chapter 3 Study 1



## 3.1 Research Methodology

### 3.1.1 Experimental design

The methodology in this research was based on an experiment, and two studies were included. In study 1, we conduct a  $2 \times 2$  between-subjects factorial design to test our hypothesis 1 and hypothesis 2. The independent variables were attitudinal congruence (high vs. low) and need for cognitive closure (high vs. low). This resulted in four conditions as listed in Table 3-1.

Table 3-1: Treatment conditions of Study 1.

Condition	Attitudinal congruence	Need for cognitive closure
1	high	high
2	high	low
3	low	high
4	low	low

To manipulate attitudinal congruence between participants and information, each selected issue included two stances: supporting and opposing the issue. In high attitudinal congruence condition, participants who support the issue will receive the supporting online rumor; participants who opposing the issue will receive the opposing online rumor. In low attitudinal congruence condition, participants who support the issue will receive the opposing online rumor; participants who opposing the issue will receive the supporting online rumor.

The variable of need for cognitive closure is not manipulated but measured by the scale adopted from Roets and Van Hiel (2011). Participants within the first 33 percent of scores would be coded as high in need for cognitive closure and the last 33 percent of scores would be coded as low in need for cognitive closure.

### 3.1.2 Test material of the independent variables

Four total stimuli were produced, representing two issues (the death penalty and the

nuclear power) and two attitudinal congruence level (high and low). The issues for the experiment were selected based on the following criterion. First, the issue must be controversial and polarized in Taiwan. Second, the issue must be known by students. A pilot study was conducted to select issues with the degree of ideological polarization (materials and results of the pilot study are presented in Appendix A). We selected the popular controversial issues in Taiwan, including the same-sex marriage, the death penalty, the euthanasia, the nuclear power, and the political party. To ensure participants' prior attitude toward these issues, they were asked what extent do they support or oppose the issues. Moreover, participants were asked in the beginning of the survey to indicate whether they are familiar with the issues in questions to ensure the response validity. As a result of our pilot study, the death penalty and the nuclear power are the most polarized issues, so we selected the death penalty and the nuclear power as the issues in this experiment.

The online rumors for per issues were collected from fact checking website (such as [tfc-taiwan.org](http://tfc-taiwan.org)), and we edited the online rumors into two versions: supporting and opposing the issue. The contents of two versions described the similar stories but based on different views. Moreover, in order to prevent confounding factors caused by the different lengths, the lengths of the rumors were relatively similar between two stances of each issue. The list of online rumor in this study is presented in Appendix B. To measure the prior attitude of participants toward the issues, participants were asked "To what extent do you support or oppose the issue?" with a 7-point scale ranging from "strongly oppose" to "strongly support" before they read the contents. This approach of measuring attitude toward issue was adopted from Kim (2015). In addition, we adopted a 15-item scale developed by Roets and Van Hiel (2011) to measure the need for cognitive closure. The list of items mentioned above is presented in Appendix E.

### 3.1.3 Measurements of the dependent variables

After reading each online rumor, participants rated how credible the rumor was and their

intention to share the message on social platform. The measurements of perceived credibility were adopted from Appelman and Sundar (2016). Participants were asked “How well do ‘accurate’ describe the content you just read?” “How well do ‘authentic’ describe the content you just read?” and “How well do ‘believable’ describe the content you just read?” with a 7-point scale ranging from “describes very poorly” to “describes very well”. In order to measure the participants’ intention to share, we adopted a 3-item scale derived from Lee and Ma (2012). Participants indicated whether they agree “I intend to share the information on social media,” “I expect to share the information on social media,” and “I plan to share the information on social media” with a 7-point scale ranging from “strongly disagree” to “strongly agree”. The list of items mentioned above is presented in Appendix C.

#### 3.1.4 Manipulation check

To ensure participants perceived the online rumor supporting or opposing the issues, we adopted a 1-item scale from Kim (2015). Participants were asked whether the content they just read supports the issue on 7-point Likert scales, with responses ranging from “very strongly disagree” to “very strongly agree”. The items mentioned above is presented in Appendix D

#### 3.1.5 Participants

In total, there were 572 participants (112 on-line and 460 on-site) in our study<sup>1</sup>. All of them were recruited via advertisement posted on Facebook. To ensure the samples diversity, we invited the students participated in our experiment on site and subjects who are non-student to participant in our experiment via online webpage. To make sure all samples are valid, we deleted 6 samples which answer durations exceed 1 standard deviation from the mean, and 1 sample which respond the same answer to all questions. At last, we found that all those 565 participants (105 on-line and 460 on-site) completed the experiment and provided valid data.

We conducted a two-sample Kolmogorov-Smirnov (KS) test to test whether on-line and on-site questionnaires datasets come from the same sample, or can be considered to be significantly different. The result of Two-sample KS test showed that the distribution of perceived credibility ( $M_{on-line} = 3.48, SD = 1.42$  vs.  $M_{on-site} = 3.51, SD = 1.10, z = 0.9, p = .39$ ) and intention to share ( $M_{on-line} = 2.00, SD = 1.34$  vs.  $M_{on-site} = 1.67, SD = 0.94, z = 1.23, p = .10$ ) did not significantly differ between the on-line and on-site samples (Appendix I). Then, after a calculation of need for cognitive closure score, we only adopted the samples within first 33 percent and last 33 percent of need for cognitive closure scores, so we deleted 176 samples. The average score of high need for cognitive closure score group was significantly different with low need for cognitive closure score group ( $M_{high} = 4.74, SD = 0.33$  vs.  $M_{low} = 3.35, SD = 0.40, t(389.50) = -37.84, p < .001$ ). Each participant received an online rumor about death penalty and an online rumor about nuclear power. We deleted the observation point that were neutral on the issue, and found the number of observation points of two issues are both 349. The observation point size of each treatment condition of study 1 is shown as Table 3-2 below.

Table 3-2 Participants assignment of Study 1.

<b>Attitudinal congruence</b>	<b>Need for cognitive closure</b>	<b>Observation point size</b>
<b>high</b>	high	160
<b>high</b>	low	156
<b>low</b>	high	195
<b>low</b>	low	187

The demographic information collected from the participants is compared against the results of a large-scale field survey conducted by Market Intelligence & Consulting Institute (MIC) (2016) to validate our external validity. A summary of the comparison is shown as Table 3-3 below.



Table 3-3 Demographic information of Study 1 participants vs. MIC report.

	<b>Samples in present study</b>	<b>Percentage in present study</b>	<b>Percentage in MIC report</b>
<b>Gender</b>			
<b>Male</b>	298	52.7	45.8
<b>Female</b>	267	47.3	54.2
<b>Age</b>			
<b>19 and under</b>	138	24.4	2.0
<b>20 – 24</b>	304	53.8	5.7
<b>25 – 29</b>	31	5.5	14.8
<b>30 – 34</b>	10	1.8	19.5
<b>35 – 39</b>	7	1.2	20.0
<b>40 and up</b>	75	13.3	38.0
<b>Location of residency</b>			
<b>Northern Taiwan</b>	487	86.2	54.9
<b>Central Taiwan</b>	48	8.5	18.9
<b>Southern Taiwan</b>	30	5.3	26.1
<b>Occupation</b>			
<b>Student</b>	452	80.0	5.3
<b>Business sector</b>	79	14.0	68.7
<b>Government sector</b>	8	1.4	9.9
<b>Fishing and agriculture</b>	3	0.5	1.3
<b>Other</b>	23	4.1	14.7

### 3.1.6 Procedure

We introduced the experimental procedure after voluntary participants provided an informed consent. Then, they were randomly assigned to one of four scenarios in this study as described in Section 3.1.1. In the beginning, all participants were asked to response their demographic information and fill up the need for cognitive closure scale. When participants complete the above procedure, they were asked to response their prior attitude toward the issue and randomly perceived the online rumor which content is consistent or inconsistent with their prior attitude as described in Section 3.1.1. After they read the content, they need to fill up the scale of manipulation check and dependent variables. Experiment procedure as described above will be completed for each of issues. Finally, they answered questions about their social media experience (presented in Appendix J). After finishing the experiment, participants will be

rewarded with NT\$150 as compensation for their involvement.



## 3.2 Empirical results

### 3.2.1 Reliability of measurements

Cronbach's  $\alpha$  was used to estimate the reliability of the dependable variable instrument. This study calculated Cronbach's  $\alpha$  to estimate reliabilities for perceived credibility and share intention of online message. All Cronbach's  $\alpha$  values were over .70 (Table 3-4), which indicates an acceptable level of internal consistency and reliability (Carmines & Zeller, 1979).

Table 3-4 Reliability of measurement.

Variable	Cronbach's $\alpha$
Perceived credibility	0.947
Share intention	0.966

### 3.2.2 Manipulation check

One-way ANOVA was used to verify the successful manipulation of the independent variables. Participants who received the message supporting the issues reported that the messages they read are more supportive than the participants who received the message opposing the issues ( $M_{support} = 5.82, SD = 1.49$  vs.  $M_{oppose} = 2.46, SD = 2.08; F(1,1128) = 971.69, MSe = 3.28, p < .001$ ). The result indicated that messages' stance toward the issues were significantly manipulated in this study.

### 3.2.3 Test of hypotheses

Two-way Manova was used to verify the moderating effect of need for cognitive closure. We included the subject in the error term estimation for more conservative treatment effect. Need for cognitive closure and attitudinal congruence were treated as fixed effect factors, and issue was treated as random effect factor.

In average, the participants in the high attitudinal congruence condition had significantly higher level of perceived credibility than that in the low attitudinal congruence condition ( $M_{high\ attitudinal\ congruence} = 3.95, SD = 1.49$  vs.  $M_{low\ attitudinal\ congruence} = 3.16, SD = 1.41$ ;  $F(1,697) = 62.48, MSe = 1.77, p < .001$ ). Thus, H1a was supported by our empirical results.

There was a significant interaction effect of attitudinal congruence and need for cognitive closure on perceived credibility ( $F(1,697) = 4.90, MSe = 1.69, p < .05$ ) (Figure 3-1). For high need for cognitive closure participants, high attitudinal congruence led to higher perceived credibility ( $M_{high\ attitudinal\ congruence} = 4.24, SD = 1.53$  vs.  $M_{low\ attitudinal\ congruence} = 3.21, SD = 1.44$ ;  $F(1,354) = 42.10, MSe = 2.19, p < .001$ ). For low need for cognitive closure participants, high attitudinal congruence also led to higher perceived credibility ( $M_{high\ attitudinal\ congruence} = 3.66, SD = 1.40$  vs.  $M_{low\ attitudinal\ congruence} = 3.11, SD = 1.39$ ;  $F(1,342) = 13.21, MSe = 1.94, p < .001$ ). The difference on perceived credibility between high attitudinal congruence and low attitudinal congruence conditions was significantly higher on high need for cognitive closure participants than on low need for cognitive closure participants (1.03 vs. 0.55,  $F(1,697) = 4.72, MSe = 1.69, p < .05$ ). That is, the attitudinal congruence effect was stronger in high need for cognitive closure condition. H2a was supported by our empirical results.

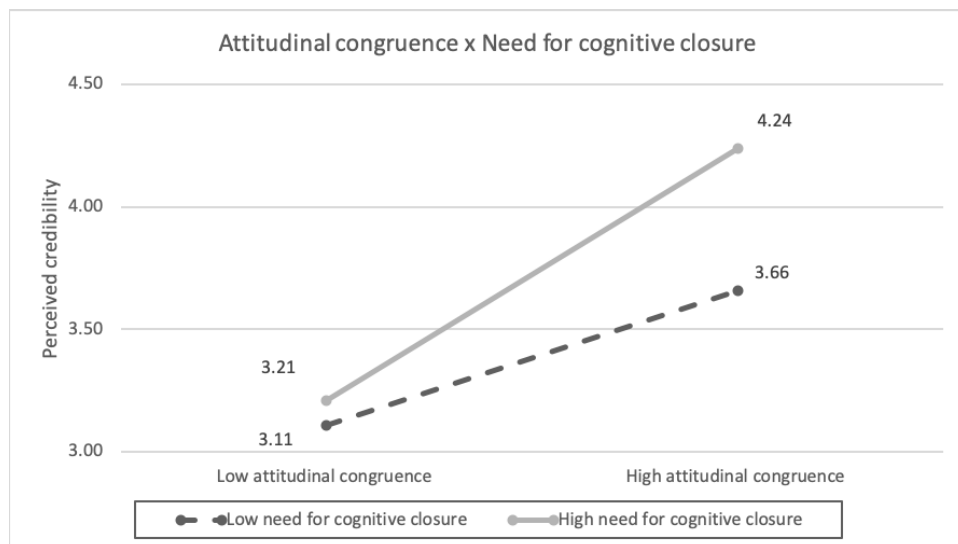


Figure 3-1 The effect of attitudinal congruence and need for cognitive closure on perceived credibility.

The participants in the high attitudinal congruence condition had significantly higher level of intention to share than that in the low attitudinal congruence condition ( $M_{high\ attitudinal\ congruence} = 2.06, SD = 1.36$  vs.  $M_{low\ attitudinal\ congruence} = 1.56, SD = 1.01, F(1,697) = 26.94, MSe = 1.59, p < .001$ ). As Figure 3-2 illustrates, the interaction effect of attitudinal congruence and need for cognitive closure on intention to share was not significant ( $F(1,697) = 1.20, MSe = 1.59, p = .276$ ). The difference on intention to share between high attitudinal congruence and low attitudinal congruence conditions was higher on high need for cognitive closure participants than on low need for cognitive closure participants (0.62 vs. 0.38), but there was no statistically significant difference. Therefore, H1b was supported, but H2b was not supported by our empirical results.

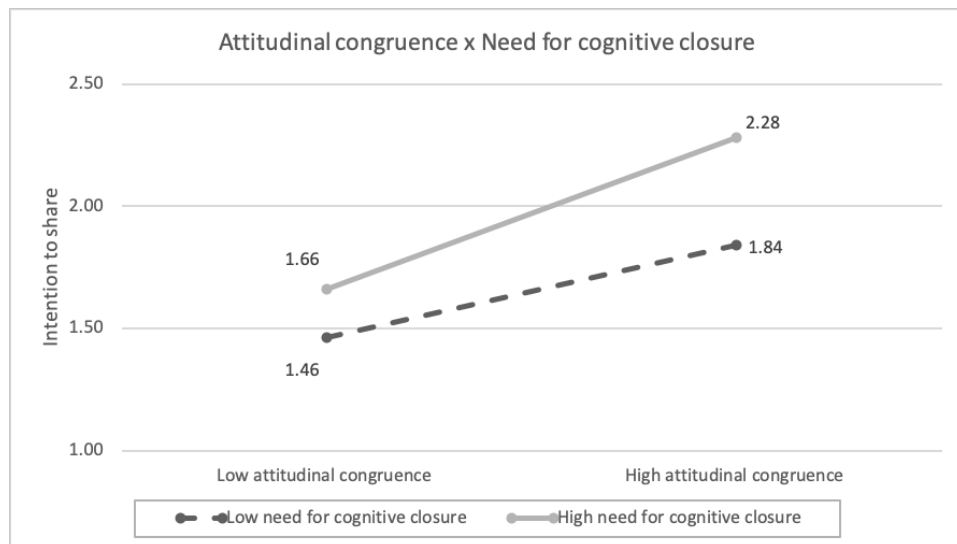


Figure 3-2 The effect of attitudinal congruence and need for cognitive closure on intention to share.

## Chapter 4 Study 2



### 4.1 Research Methodology

#### 4.1.1 Experimental design

To test our hypotheses 2, we conduct a  $2 \times 2$  between-subjects factorial design in study 2. The independent variables were emotional arousal (high vs. low) and susceptibility to emotional contagion (high vs. low). This resulted in four conditions as listed in Table 4-1.

Table 4-1: Treatment conditions of Study 2.

Condition	Emotional arousal	Susceptibility to emotional contagion
1	high	high
2	high	low
3	low	high
4	low	low

#### 4.1.2 Test material of the independent variables

In this study, the issues of the posts are the online rumor about automated teller machine and the health myths about raw fish. Thus, four total stimuli were produced, representing two issues (the ATM and the raw fish) and two emotional arousal level (high and low). The online rumor for per issues were collected from fact checking website and online news.

The contents of each issue describe the similar stories but were modified by different narrative strategy. In high emotional arousal condition, contents were modified with sensational writing style to induce arousal. On the other hand, calm writing style was used in low emotional arousal condition. In order to prevent confounding factors caused by the different lengths, the lengths of the rumors were relatively similar between two stances of each issue. The list of online rumor in this study is presented in Appendix F. To measure participants' susceptibility to emotional contagion, we adopted a 15-item scale developed by Doherty (1997). The list of items mentioned above is presented in Appendix H.

### 4.1.3 Measurements of the dependent variables

To measure the dependent variable: perceived credibility and intention to share, we adopted the identical scales in study 1 as described in Section 3.1.3. The measurements of perceived credibility were adopted from Appelman and Sundar (2016), and the measurements of participants' intention to share were derived from Lee and Ma (2012).

### 4.1.4 Manipulation check

To ensure participants perceived the online rumor arousing or calm, we adopted a 1-item scale from Cahill and McGaugh (1995). Participants indicated "How emotional you found the story to be?" with a 7-point scale ranging from "not emotional" to "highly emotional". The item mentioned above is presented in Appendix G.

### 4.1.5 Participants

The participants in this study are the same as the participants in study 1, there were 572 participants (112 on-line and 460 on-site) which were recruited via advertisement posted on Facebook. After we deleted 7 invalid data, there were 565 participants (105 on-line and 460 on-site) provided valid data. We conducted a two-sample Kolmogorov-Smirnov (KS) test to test whether on-line and on-site questionnaires datasets come from the same sample. The result of Two-sample KS test showed that the distribution of perceived credibility ( $M_{on-line} = 2.77$ ,  $SD = 1.35$  vs.  $M_{on-site} = 2.66$ ,  $SD = 1.01$ ,  $z = 1.01$ ,  $p = .26$ ) did not significantly differ between the on-line and on-site samples, but intention to share ( $M_{on-line} = 1.84$ ,  $SD = 1.30$  vs.  $M_{on-site} = 1.44$ ,  $SD = 0.79$ ,  $z = 1.46$ ,  $p < .05$ ) significantly differ between the on-line and on-site samples (Appendix I). Because of the result of KS test, we only adopted the on-site samples (460 participants) in this study. After a calculation of need for cognitive closure score, we adopted the data within first 33 percent and last 33 percent of susceptibility to emotional contagion

scores. The average score of high susceptibility to emotional contagion score group was significantly different with low susceptibility to emotional contagion score group ( $M_{high} = 4.32$ ,  $SD = 0.24$  vs.  $M_{low} = 3.34$ ,  $SD = 0.32$ ,  $t(307.01) = -32.03$ ,  $p < .001$ ). After we deleted the median group of emotional contagion score (123 samples), there were 337 samples in this study, and each participant received two messages of different issues. Thus, each sample have 2 observation points in our Study 2. The observation point size of each treatment condition is shown as Table 4-2 below.

Table 4-2 Participants assignment of Study 2.

<b>Emotional arousal</b>	<b>Susceptibility to</b>	<b>Observation point size</b>
<b>high</b>	high	176
<b>high</b>	low	164
<b>low</b>	high	168
<b>low</b>	low	166

The demographic information collected from the participants is compared against the results of a large-scale field survey conducted by Market Intelligence & Consulting Institute (MIC) (2016) to validate our external validity. A summary of the comparison is shown as Table 4-3 below.

Table 4-3 Demographic information of Study 2 participants vs. MIC report.

	<b>Samples in present study</b>	<b>Percentage in present study</b>	<b>Percentage in MIC report</b>
<b>Gender</b>			
<b>Male</b>	226	49.1	45.8
<b>Female</b>	234	50.9	54.2
<b>Age</b>			
<b>19 and under</b>	138	30.0	2.0
<b>20 – 24</b>	297	64.6	5.7
<b>25 – 29</b>	18	3.9	14.8
<b>30 – 34</b>	4	0.9	19.5
<b>35 – 39</b>	3	0.7	20.0
<b>40 and up</b>	0	0.0	38.0
<b>Location of residency</b>			
<b>Northern Taiwan</b>	390	84.8	54.9

<b>Central Taiwan</b>	41	8.9	18.9
<b>Southern Taiwan</b>	29	6.3	26.1
<b>Occupation</b>			
<b>Student</b>	450	97.8	5.3
<b>Business sector</b>	1	0.2	68.7
<b>Government sector</b>	4	0.9	9.9
<b>Fishing and agriculture</b>	1	0.2	1.3
<b>Other</b>	4	0.9	14.7

#### 4.1.6 Procedure

We invited voluntary participants to our behavioral science lab to conduct the experiment. We introduced the experiment procedure after they provided an informed consent. They were asked to response their demographic information and fill up the emotional contagion scale. Then, they were randomly assigned to one of four scenarios in this study as described in Section 4.1.1. They were randomly perceived the online rumor which content is arousing or calm as described. After they read the content, they need to fill up the scale of manipulation check and dependent variables. Experiment procedure as described above will be completed for each of issues. When participants complete the above procedure, they were asked to response their social media experience in the end (presented in Appendix K).

## 4.2 Empirical results

### 4.2.1 Reliability of measurements

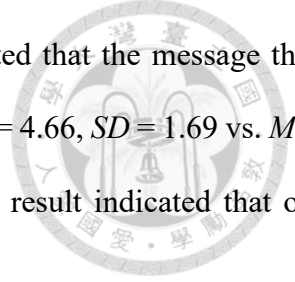
Cronbach's  $\alpha$  was used to estimate the reliability of the dependable variable instrument. The dependent variables in this study are the same as dependent variables in study 1. The result is shown in Table 3-4.

### 4.2.2 Manipulation check

One-way ANOVA was used to verify the successful manipulation of the independent



variables. Participants assigned to the high emotional arousal group which received the message modified with sensational writing style and emotional words reported that the message they read are more emotional than the low emotional arousal group ( $M_{high} = 4.66, SD = 1.69$  vs.  $M_{low} = 3.49, SD = 1.50; F(1,916) = 122.21, MSe = 2.54, p < .01$ ). The result indicated that our independent variable was significantly manipulated in this study.



### 4.2.3 Test of hypotheses

Two-way Manova was used to verify the moderating effect of susceptibility to emotional contagion, because the dependent variables were possibly correlated. We included the subjective in the error term estimation for more conservative treatment effect. Susceptibility to emotional contagion and emotional arousal were treated as fixed effect factors, and issue was treated as random effect factor. In average, the participants in the high and low emotional arousal condition had no significant difference in terms of perceived credibility ( $M_{high\ emotional\ arousal} = 2.43, SD = 1.16$  vs.  $M_{low\ emotional\ arousal} = 2.86, SD = 1.32; F(1,673) = 3.85, MSe = 8.30, p = .300$ ). Although there was no statistically significant effect, the mean of perceived credibility under high and low emotional arousal condition were contrast with our predictions.

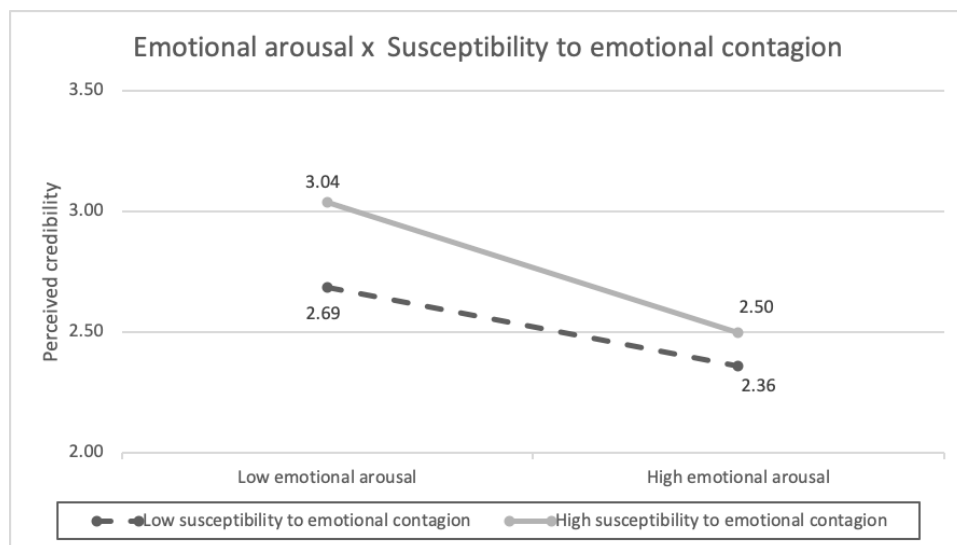
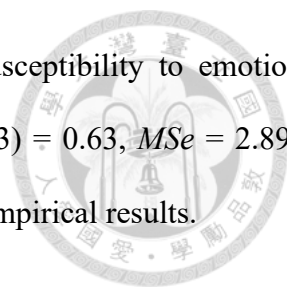


Figure 4-1 The effect of emotional arousal and susceptibility to emotional contagion on perceived credibility.



Moreover, the interaction effect of emotional arousal and susceptibility to emotional contagion on perceived credibility was also not significant ( $F(1,673) = 0.63, MSe = 2.89, p = .509$ ) (Figure 4-1). Thus, H3a and H4a was not supported by our empirical results.

The main effect of emotional arousal was not significant on intention to share ( $M_{high} = 1.34, SD = 0.77$  vs.  $M_{low} = 1.46, SD = 0.94; F(1,673) = 2.55, MSe = 0.88, p = .115$ ). Although there was no statistically significant effect, the mean of intention to share under high and low emotional arousal condition were contrast with our predictions. The interaction effect of emotional arousal and susceptibility to emotional contagion on intention to share was also not significant ( $F(1,673) = 4.98, MSe = 1.61, p = .112$ ) (Figure 4-2). Therefore, H3b and H4b was not supported by our empirical results.

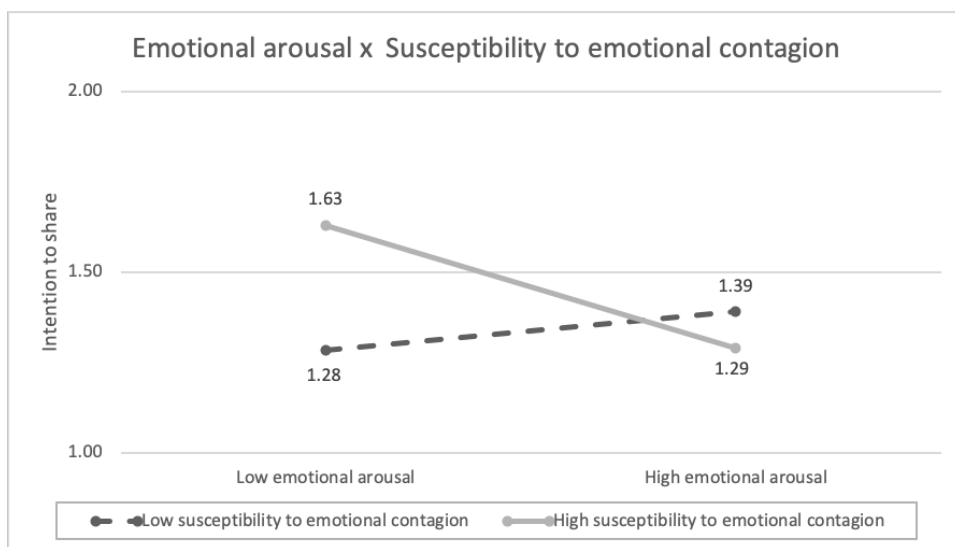
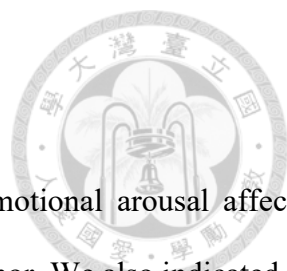


Figure 4-2 The effect of emotional arousal and susceptibility to emotional contagion on intention to share.

## Chapter 5 Conclusion

### 5.1 Conclusion and Implications



This research investigated how attitudinal congruence and emotional arousal affected individuals' perceived credibility and intention to share of online rumor. We also indicated the moderating effects of need for cognitive closure. In Study 1, as predicted by H1a and H1b, high attitudinal congruence between individual and information generated higher perceived credibility and intention to share than low attitudinal congruence condition. In addition, as proposed by H2a, the attitudinal congruence effect was stronger for individuals with high need for cognitive closure than for individuals with low need for cognitive closure. However, this moderating effect was not significant in the relationship between attitudinal congruence and intention to share. In Study 2, the empirical results show that emotional arousal of online rumor did not affect readers' perceived credibility and intention to share. The moderating effect of susceptibility to emotional contagion were also not significant in the relationship between emotional arousal and our dependent variables.

Three theoretical implications can be drawn from this paper. First, the findings of this research document that when attitudinal congruence between readers and information was high, readers' perceived credibility and intention to share will be higher than when they read the attitude-inconsistent messages. Second, individual with high need for cognitive closure would evaluate attitude-consistent message more credible than individual with low need for cognitive closure. Finally, this research show that the emotional arousal of messages could not affect readers' perceived credibility and intention to share. According to Jensen, Averbek, Zhang, and Wright (2013), readers with high media literacy may perceive that the high arousal messages were utilizing a more subjective versus objective writing style, so their perceived credibility and sharing intention may lower. Additionally, our sample are most young and high education level participants, they may have much internet experience and high media literacy,

so they would be sensitive and wary of the sensationalist tabloid writing style (Drotner & Kobbernagel, 2014).

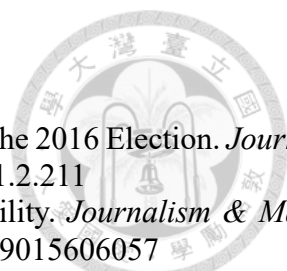
Several managerial implications can be derived from this research. First, for social media websites, they should work to stop partisan message on social platforms. The biggest controversies around fake news are social issue and political advertisement posts, social platform need to increase the transparency around that with disclosure who paid for the advertisement. Second, social platform can use artificial intelligence technology and work with third-party fact-checker to label the false content, so people can better decide for themselves what to read, trust and share. Third, because the media literacy education is popularizing gradually, online media should not use sensationalist tabloid writing style to attract readers' attention, this may be a negative impact of reputation of their news credibility.

## **5.2 Limitations and Future Work**

There are several concerns should be addressed in future research. First, we conducted this experiment primary in student and high educational level samples, the elderly and low educational level groups were less. Thus, sample diversity should be concern in future research. Second, although the emotional arousal of messages manipulated in Study 2 were successful, the participants may not really be aroused by the arousing messages. Additionally, self-reported method which is susceptible to response bias, so future research should check participants' fluctuations in emotional arousal by heart rate (HR) or galvanic skin response (GSR). Third, we provided online message of two issues for our participants and requested them to read them in the scenarios, but online users' share intention might be related to issue popularity at that time. Because the experiments were conducted after we made the experimental materials few months ago, the issues we use might be out of date, which might affect subjects' intention to share. Future research should shorten the time gap between materials making and experiments

to avoid this problem. Last, there are still some possible factors to influence information processing on social platform, future studies can focus on (1) whether people with high need for cognitive closure are more likely to be affected by other heuristic cues such as information source and the number of click like or share, and (2) whether demographic characteristics and media literacy affect attitudinal congruence and emotional effect on information evaluation. Moreover, different media types provide people with different levels of information control, for example, information control for livestream on social media is lower than that for text message. When watching a livestream, people can't freely control the information order and which information to perceived. Thus, future studies can investigate whether different types of social media content, such as livestreams, videos, podcasts, etc., will affect the effect of stance and emotion on individuals' information processing. By investigating more possible factors, people can better understand why false information spread faster and more broadly on social media, and develop a strategy to stop false information.

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# Appendix A



## Measurements of the pilot study

Constructs	English version	Chinese version
Issue familiarity	Have you ever concerned about the <issue>? (Yes, No)	請問您是否曾關注過<issue>? (是；否)
Prior attitude (Kim, 2015)	To what extent do you support or oppose the <issue>? (1: Strongly oppose, 7: Strongly support)	對於 <issue>，你的支持或反對程度為何？ (1：非常反對；7：非常支持)

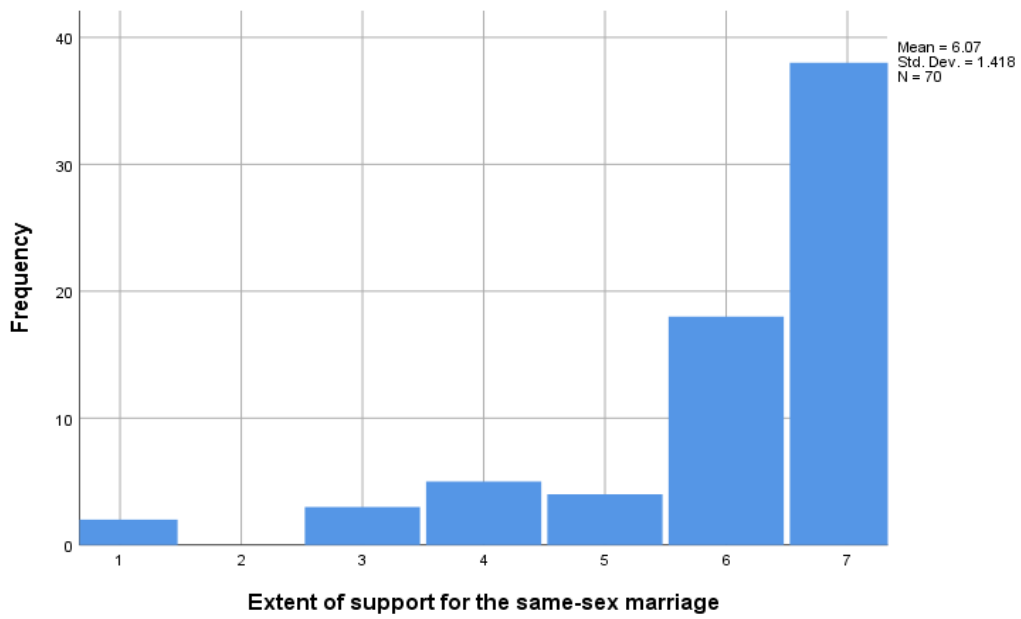
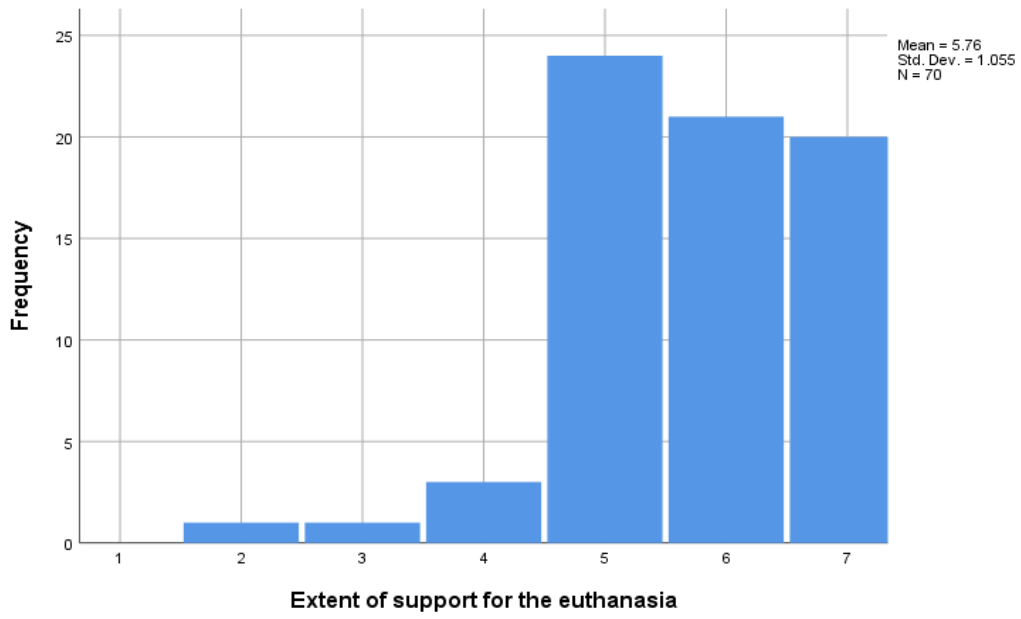
<issue> is a substituted with the issue in each condition.

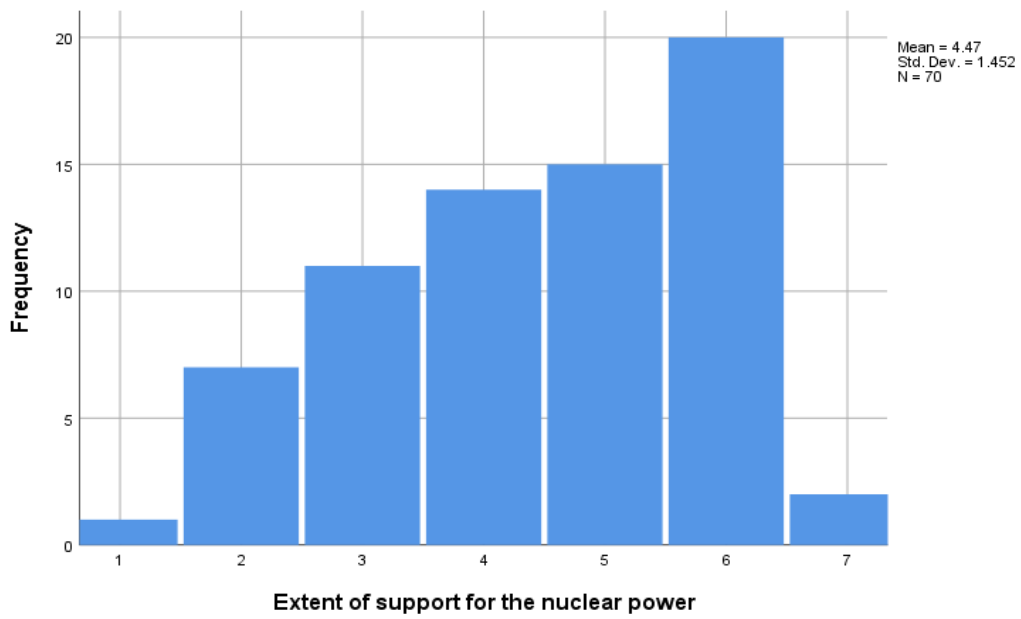
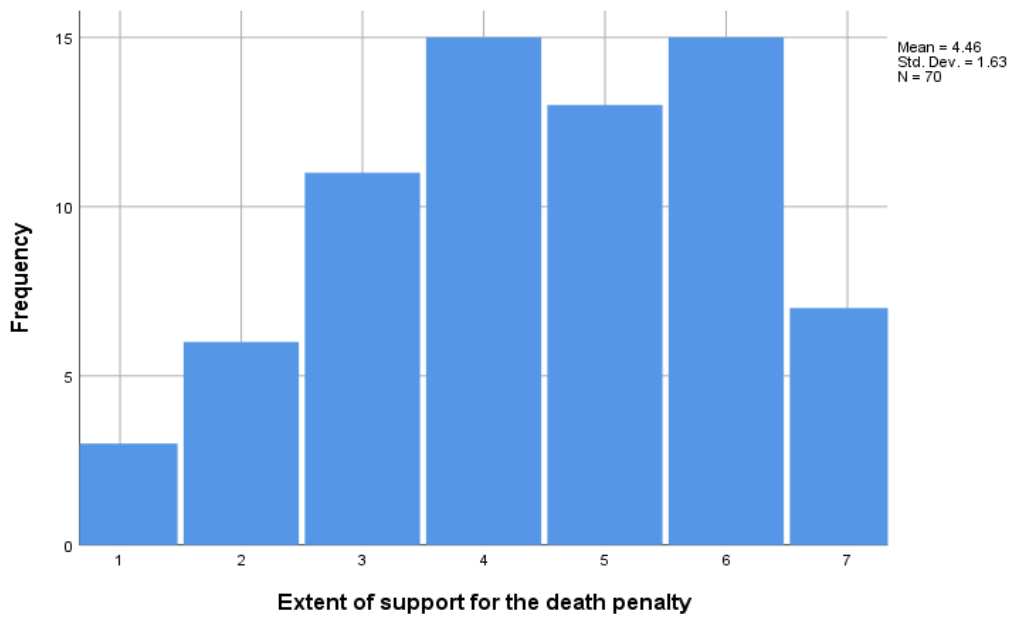
## Result of the pilot study

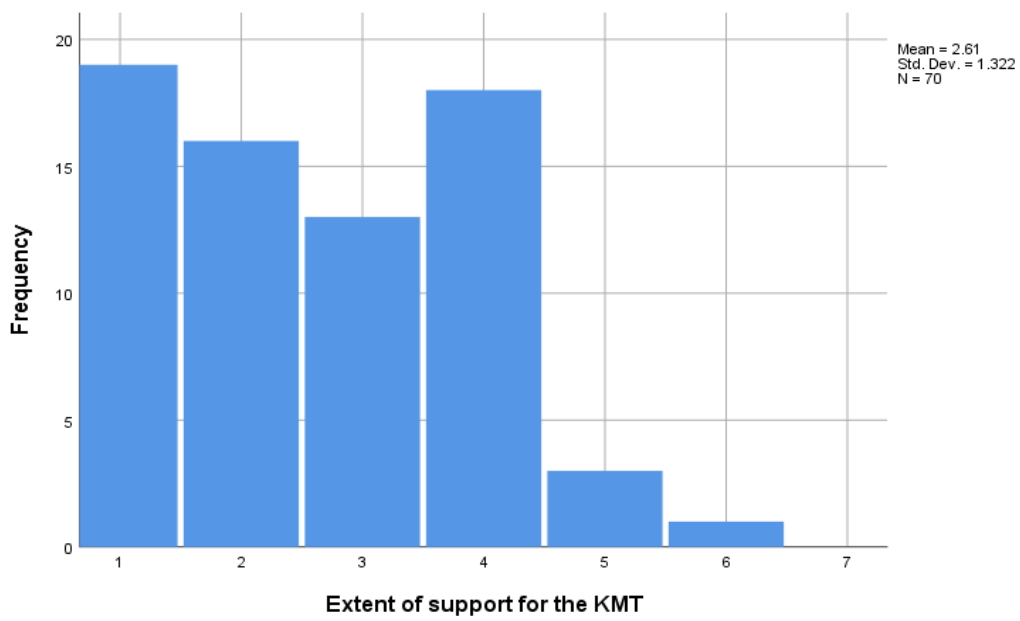
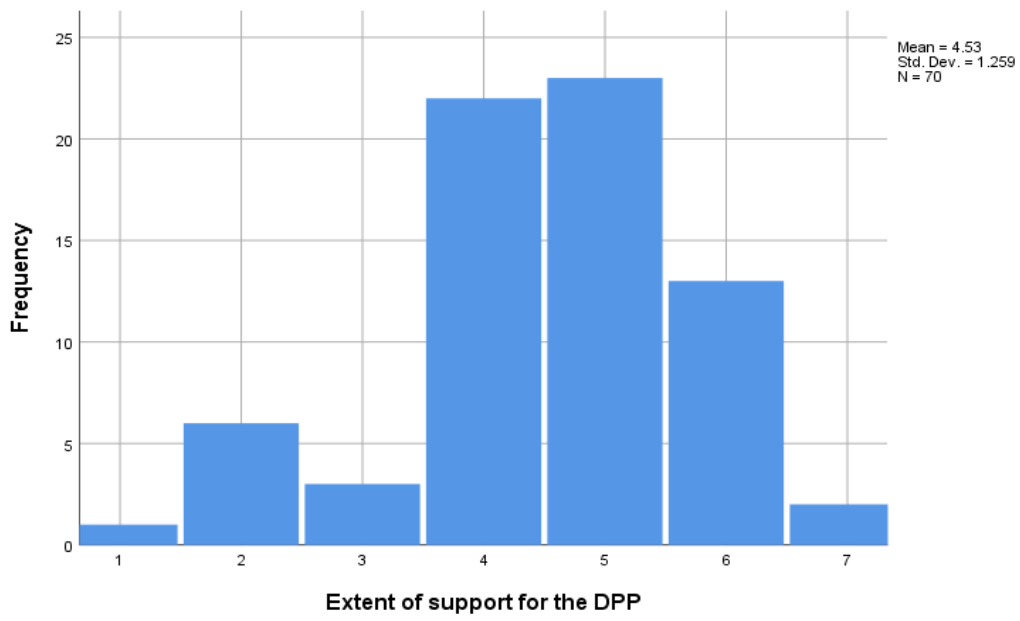
Issue	Familiarity	Mean	SD
Euthanasia	86%	5.76	1.06
Same-sex marriage	94%	6.07	1.42
Nuclear power <sup>1</sup>	84%	4.47	1.45
Death penalty <sup>1</sup>	84%	4.46	1.63
Political parties in Taiwan	79%	DPP	4.53
		KMT	2.61

\* Br1 was used as measurement

1: Selected as manipulation of issue in Study 1







## Appendix B



Example post of Study 1.



周曜宇

1 分鐘

近期北部的海水品質改善，原因是政府停止運轉核二廠，不再排放核廢料到海裡，過去核廢料透過海水散播到北部海域中，現在停用核二廠，海水品質就開始好轉，如果所有核電廠都停止運轉，水污染問題就能很好的改善。



讚



留言



分享

Post contents of Study 1 (Chinese version).

Issue	Manipulation of supporting the issue	Manipulation of opposing the issue
Nuclear power	近期北部的空氣品質改善，原因是核二廠開始運轉，不再需要火力發電廠全力運轉，過去火力發電廠的廢氣很快就被風吹到台北，現在核二廠開始運轉，空氣品質就開始好轉，如果所有核電廠都開始運轉，空氣品質就能很好的改善。	近期北部的海水品質改善，原因是政府停止運轉核二場，不再排放核廢料到海裡，過去核廢料透過海水散播到北部海域中，現在停用核二廠，海水品質就開始好轉，如果所有核電廠都停止運轉，水污染問題就能很好的改善。
Death penalty	法務部長受召入府討論死刑執行，希望以執行死刑來安撫社會，這種做法廣受國人認同，因為執行死刑可以實現社會公義、安慰受害者和家屬，台灣未來應該持續執行死刑，遏止犯罪的發生，不該廢除死刑。	法務部長受召入府討論死刑執行，希望以死刑增加人民認同、安撫社會，這種做法不太恰當，因為貿然執行死刑有違程序正義與人權精神，台灣未來應該廢除死刑，避免這種利用死刑的狀況發生。

Rumor contents of Study 1 (English-translated version).

Issue	Manipulation of supporting the issue	Manipulation of opposing the issue
Nuclear power	<p>Recently, the air quality in the north has improved because the nuclear power plant started to operate, and the thermal power plant no longer needs to be fully operated. In the past, the exhaust gas of the thermal power plant was blown to Taipei soon. If all nuclear power plants are operated, the air quality can be improved very well.</p>	<p>Recently, the quality of seawater in the north has improved because the government stopped operating the second nuclear plant and no longer emits nuclear waste into the sea. In the past, nuclear waste was disseminated into the northern sea area. Now, the second nuclear plant is stopped, and the quality of seawater begins to improve. If all nuclear power plants are shut down, the problem of water pollution can be improved very well.</p>
Death penalty	<p>The Minister of Justice was called into the government to discuss the execution of death penalty, hoping to appease the society by executing death penalty, which is widely recognized by compatriots because the execution of the death penalty can achieve social justice, comfort the victims and their families. Taiwan should continue to implement death penalty to curb crime. The death penalty should not be abolished.</p>	<p>The Minister of Justice was called into the government to discuss the execution of the death penalty, hoping to increase the recognition of the people and appease the society by executing the death penalty. This approach is not appropriate because the rash execution of the death penalty violates the procedural justice and human rights. Taiwan should abolish the death penalty in the future and avoid abusing the death penalty.</p>

## Appendix C



Measurements of the dependent variables.

Constructs		English version	Chinese version
Perceived credibility (Appelman & Sundar, 2016)	1	How well do the “accurate” describe the content you just read? (1: Describes very poorly; 7: Describes very well)	此貼文內容，「準確」的程度為何？ (1：非常低；7：非常高)
	2	How well do the “authentic” describe the content you just read? (1: Describes very poorly; 7: Describes very well)	此貼文內容，「真實」的程度為何？ (1：非常低；7：非常高)
	3	How well do the “believable” describe the content you just read? (1: Describes very poorly; 7: Describes very well)	此貼文內容，「可信」的程度為何？ (1：非常低；7：非常高)
Intention to share (Lee & Ma, 2012)	1	I intend to share the information on social media. (1: Strongly disagree, 7: Strongly agree)	我打算在社群媒體上分享這則資訊。 (1: 非常不同意;7: 非常同意)
	2	I expect to share the information on social media.	我希望在社群媒體上分享這則

	(1: Strongly disagree, 7: Strongly agree)	資訊。 (1: 非常不同意;7: 非常同意)
3	I plan to share the information on social media. (1: Strongly disagree, 7: Strongly agree)	我計劃在社群媒體上分享這則資訊。 (1: 非常不同意;7: 非常同意)



## Appendix D



### Measurements of the prior attitude construct of Study 1.

Constructs		English version	Chinese version
Prior attitude (Kim, 2015)	1	To what extent do you support or oppose the <issue>? (1: Strongly oppose, 7: Strongly support)	對於 <issue>，你的支持或反對程度為何？ (1：非常反對；7：非常支持)

<issue> is a substituted with the issue in each condition.

### Measurement of the manipulation check of Study 1.

Constructs		English version	Chinese version
Content stance (Kim, 2015)	1	The content you just read supports the <issue>. (1: Strongly disagree, 7: Strongly agree)	您剛剛閱讀的內容，立場為支持 <issue>。 (1: 非常不同意;7: 非常同意)

## Appendix E



### Measurement of the need for cognitive closure

Constructs		English version	Chinese version
need for cognitive closure (Roets & Van Hiel, 2011)	1	I don't like situations that are uncertain.  (1: Strongly disagree, 6: Strongly agree)	我不喜歡不確定的狀況。  (1: 非常不同意;6: 非常同意)
	2	I dislike questions which could be answered in many different ways.  (1: Strongly disagree, 6: Strongly agree)	我不喜歡那些有許多不同答案的問題。  (1: 非常不同意;6: 非常同意)
	3	I find that a well-ordered life with regular hours suits my temperament.  (1: Strongly disagree, 6: Strongly agree)	我發現我的個性適合井井有條、作息固定的生活方式。  (1: 非常不同意;6: 非常同意)
	4	I feel uncomfortable when I don't understand the reason why an event occurred in my life.  (1: Strongly disagree, 6: Strongly agree)	當我不瞭解我生活中某件事發生的原因時，我會感到不舒服。  (1: 非常不同意;6: 非常同意)
	5	I feel irritated when one person disagrees with what everyone else in a group believes.	當某個人不同意群體內其他人都認同的觀點時，我會感

	(1: Strongly disagree, 6: Strongly agree)	到惱火。 (1: 非常不同意;6: 非常同意)
6	I don't like to go into a situation without knowing what I can expect from it. (1: Strongly disagree, 6: Strongly agree)	我不喜歡進入一個無法預期的情境中。 (1: 非常不同意;6: 非常同意)
7	When I have made a decision, I feel relieved. (1: Strongly disagree, 6: Strongly agree)	當我做完了一個決定時，我會感覺很舒服。 (1: 非常不同意;6: 非常同意)
8	When I am confronted with a problem, I'm dying to reach a solution very quickly. (1: Strongly disagree, 6: Strongly agree)	當我面臨問題時，我會迫不及待找到解決的方法。 (1: 非常不同意;6: 非常同意)
9	I would quickly become impatient and irritated if I would not find a solution to a problem immediately. (1: Strongly disagree, 6: Strongly agree)	當我無法立即找到問題的解決方法時，我會很快變得沒有耐心和煩躁。 (1: 非常不同意;6: 非常同意)
10	I don't like to be with people who are capable of unexpected actions.	我不喜歡與會做出意想不到的事情及行為的人在一起。

	(1: Strongly disagree, 6: Strongly agree)	(1: 非常不同意;6: 非常同意)
11	I dislike it when a person's statement could mean many different things. (1: Strongly disagree, 6: Strongly agree)	我不喜歡一個人的話裡面有各種不同的含義。 (1: 非常不同意;6: 非常同意)
12	I find that establishing a consistent routine enables me to enjoy life more. (1: Strongly disagree, 6: Strongly agree)	我發現建立一套例行且前後一致的規律能使我更好的享受生活。 (1: 非常不同意;6: 非常同意)
13	I enjoy having a clear and structured mode of life. (1: Strongly disagree, 6: Strongly agree)	我喜歡有條不紊的生活方式。 (1: 非常不同意;6: 非常同意)
14	I do not usually consult many different opinions before forming my own view. (1: Strongly disagree, 6: Strongly agree)	在自己還沒有定見之前，我通常不會諮詢許多不同的意見。 (1: 非常不同意;6: 非常同意)
15	I dislike unpredictable situations. (1: Strongly disagree, 6: Strongly agree)	我不喜歡無法預測的情境。 (1: 非常不同意;6: 非常同意)

## Appendix F



Example post of Study 2.



周曜宇

4 分鐘



崩潰！台北馬偕醫院傳來訊息：「請大家以後千萬不要再吃生魚片了！」因為最近發現，好多病人因為吃了生魚片，胃壁附著噁爛的「海獸胃線蟲」！有的病人甚至胃壁上滿滿都是，連醫生都絕望，無法夾出來也很難根治！尤其鮭魚的含蟲量超高，令人毛骨悚然！



讚



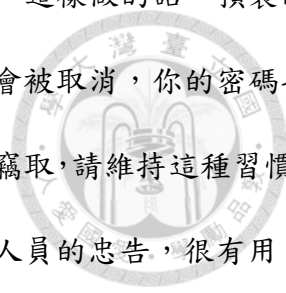
留言



分享

Post contents of Study 2 (Chinese version).

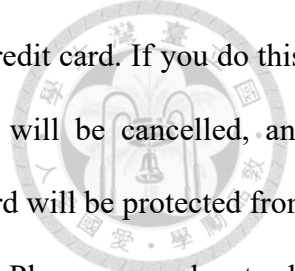
Issue	Manipulation of high arousal	Manipulation of low arousal
Raw fish	崩潰！台北馬偕醫院傳來訊息：「請大家以後千萬不要再吃生魚片了！」因為最近發現，好多病人因為吃了生魚片，胃壁附著噁爛的「海獸胃線蟲」！有的病人甚至胃壁上滿滿都是，連醫生都絕望，無法夾出來也很難根治！尤其鮭魚的含蟲量超高，令人毛骨悚然！	台北馬偕醫院傳來訊息：「請大家以後盡量不要再吃生魚片了。」因為最近發現，好多病人因為吃了生魚片，胃壁附著「海獸胃線蟲」，有的病人甚至胃壁上有好多隻，大小隻不一定，無法夾出來也很難根治，尤其鮭魚的含蟲量最高，應多留意。
ATM	震驚！近來發現有提款機被詐騙集團預安裝了「盜取密碼」的程式，因此在使用提款機插入你的信用卡	近來發現有提款機被人預裝了「盜取密碼」的程式，因此在使用提款機插入你的信用卡前，記得先按「取

	<p>前，記得先按「取消」鍵兩次！這樣做的話，惡劣的駭客程式就會被取消，你的密碼也避免了被罪犯竊取！一定要維持這種習慣，這是銀行業人員的忠告，超級有用！</p>	<p>消」鍵兩次，這樣做的話，預裝的駭客程式就會被取消，你的密碼也避免了被人竊取，請維持這種習慣，這是銀行業人員的忠告，很有用。</p> 
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Post contents of Study 2 (English version).

Issue	Manipulation of high arousal	Manipulation of low arousal
Raw fish	<p>How awful! The message from Taipei Mackay Hospital: "Please don't eat sashimi anymore in the future!" Because it was recently discovered that many patients have eaten sashimi, and the disgusting "Anisakis spp." is attached to their stomach wall! Some patients' stomach walls even full of them. It is difficult to cure and take them out! Even doctors are desperate about it. In particular, the salmon have a lot of "Anisakis spp.", how creepy!</p>	<p>The message from Taipei Mackay Hospital: "Please don't eat sashimi as possible in the future." Because it was recently discovered that many patients have eaten sashimi, and the "Anisakis spp." is attached to their stomach wall. Some patients' stomach walls even have many of them whose size are not absolute. It is difficult to cure and take them out. In particular, the salmon have a lot of "Anisakis spp.", please be careful.</p>
ATM	<p>Shock! It was discovered that the "steal password" program is pre-installed in the ATM by fraudulent</p>	<p>It was discovered that the "steal password" program is pre-installed in the ATM, so please remember to press</p>

	<p>scam gang, so please remember to press the “cancel” button twice before you insert your credit card! If you do this, the hacker program will be cancelled, and your password will be protected from being stolen by criminals! This step must be remembered to do every time, this is the advice from the banking industry, super helpful!</p>	<p>the “cancel” button twice before you insert your credit card. If you do this, the program will be cancelled, and your password will be protected from being stolen. Please remember to do the step every time, this is the useful advice from the banking industry.</p>
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## Appendix G



Measurement of the manipulation check of Study 2.

Constructs	English version	Chinese version
Content emotional arousal (Cahill & McGaugh, 1995)	1 How emotional you found the story to be? (1: not emotional;7: highly emotional)	您覺得這則貼文有多激動? (1: 非常不激動;7: 非常激動)



## Appendix H

### Measurements of the susceptibility to emotional contagion



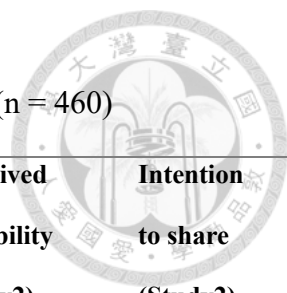
Constructs		English version	Chinese version
susceptibility to emotional contagion (Doherty, 1997)	1	If someone I'm talking with begins to cry, I get teary-eyed. (1: Never, 5: Always)	和我一起說話的人如果傷心地哭了，我也會感到難過，眼睛濕潤。  (1: 完全不符合;5: 完全符合)
	2	Being with a happy person picks me up when I'm feeling down. (1: Never, 5: Always)	在我情緒低落的時候，和快樂的人在一起會讓我的心情好起來。  (1: 完全不符合;5: 完全符合)
	3	When someone smiles warmly at me, I smile back and feel warm inside. (1: Never, 5: Always)	別人對我熱情地微笑，我能感受到溫情並還以微笑。  (1: 完全不符合;5: 完全符合)
	4	I get filled with sorrow when people talk about the death of their loved ones. (1: Never, 5: Always)	當人們談到他們親人離開人世的事情時，我也會感到難過。  (1: 完全不符合;5: 完全符合)
	5	I clench my jaws and my shoulders get tight when I see the angry faces on the news. (1: Never, 5: Always)	當我看到新聞中生氣的面孔時，我會咬緊牙關、肩膀緊繃。  (1: 完全不符合;5: 完全符合)

		(1: 完全不符合;5: 完全符合)
6	When I look into the eyes of the one I love, my mind is filled with thoughts of romance. (1: Never, 5: Always)	注視愛人的眼睛時，我能體會到特別的浪漫。 (1: 完全不符合;5: 完全符合)
7	It irritates me to be around angry people. (1: Never, 5: Always)	在憤怒的人群旁邊，我會感到焦躁不安。 (1: 完全不符合;5: 完全符合)
8	Watching the fearful faces of victims on the news makes me try to imagine how they might be feeling. (1: Never, 5: Always)	看到新聞裡受害人驚恐的表情我也會感到有些驚慌。 (1: 完全不符合;5: 完全符合)
9	I melt when the one I love holds me close. (1: Never, 5: Always)	當愛人擁抱我的時候，我會感到陶醉。 (1: 完全不符合;5: 完全符合)
10	I tense when overhearing an angry quarrel. (1: Never, 5: Always)	不經意聽到別人憤怒的爭吵，我會變得有些緊張。 (1: 完全不符合;5: 完全符合)
11	Being around happy people fills my mind with happy thoughts. (1: Never, 5: Always)	和快樂的人在一起，我也會感到快樂。 (1: 完全不符合;5: 完全符合)
12	I sense my body responding	當愛人觸碰我的時候，我的

	when the one I love touches me. (1: Never, 5: Always)	身體會有反應。 (1: 完全不符合;5: 完全符合)
13	I notice myself getting tense when I'm around people who are stressed out. (1: Never, 5: Always)	當周圍的人特別緊張的時候，我也會變得緊張起來 (1: 完全不符合;5: 完全符合)
14	I cry at sad movies. (1: Never, 5: Always)	感傷的電影劇情會讓我傷心流淚。 (1: 完全不符合;5: 完全符合)
15	Listening to the shrill screams of a terrified child in a dentist's waiting room makes me feel nervous. (1: Never, 5: Always)	在牙醫診所的候診室中，聽見恐懼的孩子發出刺耳的尖叫會使我感到緊張。 (1: 完全不符合;5: 完全符合)

# Appendix I

Kolmogorov-Smirnov test for on-line (n = 105) and on-site samples (n = 460)



		<b>Perceived credibility (Study1)</b>	<b>Intention to share (Study1)</b>	<b>Perceived credibility (Study2)</b>	<b>Intention to share (Study2)</b>
<b>Most</b>	<b>Absolute</b>	0.097	0.133	0.109	0.158
<b>Extreme</b>	<b>Positive</b>	0.069	0.133	0.079	0.158
<b>Differences</b>	<b>Negative</b>	-0.097	0.000	-0.109	0.000
<b>Kolmogorov- Smirnov Z</b>		0.900	1.232	1.011	1.461
<b>Asymp. Sig. (2 - tailed)</b>		0.393	0.096	0.259	0.028

## Appendix J

Participants information in Study 1 versus that of the MIC report.



	<b>Samples in present study</b>	<b>Percentage in present study</b>	<b>Percentage in MIC report</b>
<b>Demographic information</b>			
<b>Gender</b>			
<b>Male</b>	298	52.7	45.8
<b>Female</b>	267	47.3	54.2
<b>Age</b>			
<b>19 and under</b>	138	24.4	2.0
<b>20 – 24</b>	304	53.8	5.7
<b>25 – 29</b>	31	5.5	14.8
<b>30 – 34</b>	10	1.8	19.5
<b>35 – 39</b>	7	1.2	20.0
<b>40 and up</b>	75	13.3	38.0
<b>Location of residency</b>			
<b>Northern Taiwan</b>	487	86.2	54.9
<b>Central Taiwan</b>	48	8.5	18.9
<b>Southern Taiwan</b>	30	5.3	26.1
<b>Occupation</b>			
<b>Student</b>	452	80.0	5.3
<b>Business sector</b>	79	14.0	68.7
<b>Government sector</b>	8	1.4	9.9
<b>Fishing and agriculture</b>	3	0.5	1.3
<b>Other</b>	23	4.1	14.7
<b>Social media usage behavior</b>			
<b>Social networking sites used (multiple selection)</b>			
<b>Facebook</b>	564	99.8	94.8
<b>Instagram</b>	480	85.0	26.1
<b>Dcard</b>	325	57.5	6.6
<b>Google+</b>	254	45.0	32.7
<b>Twitter</b>	185	32.7	12.9
<b>Pinterest</b>	100	17.7	4.4
<b>LinkedIn</b>	83	14.7	9.4
<b>Snapchat</b>	75	13.3	2.8
<b>Plurk</b>	43	7.6	8.3
<b>Social networking sites usage frequency</b>			
<b>Less than once per week</b>	5	0.9	2.1
<b>Once per week</b>	3	0.5	1.9
<b>More than 2 – 3 times per week</b>	12	2.1	5.8
<b>Once per day</b>	21	3.7	13.2
<b>2 – 5 times per day</b>	124	21.9	36.4

<b>6 – 10 times per day</b>	166	29.4	18.4
<b>11 – 30 times per day</b>	164	29.0	13.5
<b>More than 30 times per day</b>	70	12.4	8.6
<b>Main purpose for using Facebook (multiple selection)</b>			
<b>Keep in touch with friends and family</b>	502	88.8	64.1
<b>Recreational reasons</b>	513	90.8	51.7
<b>Keep record of personal life</b>	368	65.1	44.1
<b>Acquire help in life, education, and work</b>	437	77.3	33.0
<b>Follow current events</b>	404	71.5	32.1
<b>Receive updates on brands</b>	234	41.4	20.3
<b>Make new friends</b>	154	27.3	19.2
<b>Follow celebrities</b>	268	47.4	15.0

## Appendix K

Participants information in Study 2 versus that of the MIC report.



	<b>Samples in present study</b>	<b>Percentage in present study</b>	<b>Percentage in MIC report</b>
<b>Demographic information</b>			
<b>Gender</b>			
Male	226	49.1	45.8
Female	234	50.9	54.2
<b>Age</b>			
19 and under	138	30.0	2.0
20 – 24	297	64.6	5.7
25 – 29	18	3.9	14.8
30 – 34	4	0.9	19.5
35 – 39	3	0.7	20.0
40 and up	0	0.0	38.0
<b>Location of residency</b>			
Northern Taiwan	390	84.8	54.9
Central Taiwan	41	8.9	18.9
Southern Taiwan	29	6.3	26.1
<b>Occupation</b>			
Student	450	97.8	5.3
Business sector	1	0.2	68.7
Government sector	4	0.9	9.9
Fishing and agriculture	1	0.2	1.3
Other	4	0.9	14.7
<b>Social media usage behavior</b>			
<b>Social networking sites used (multiple selection)</b>			
Facebook	460	100.0	94.8
Instagram	427	92.8	26.1
Dcard	306	66.5	6.6
Google+	214	46.5	32.7
Twitter	166	36.1	12.9
Pinterest	95	20.7	4.4
LinkedIn	58	12.6	9.4
Snapchat	70	15.2	2.8
Plurk	39	8.5	8.3
<b>Social networking sites usage frequency</b>			
Less than once per week	1	0.2	2.1
Once per week	2	0.4	1.9
More than 2 – 3 times per week	5	1.1	5.8
Once per day	11	2.4	13.2
2 – 5 times per day	85	18.5	36.4

<b>6 – 10 times per day</b>	142	30.9	18.4
<b>11 – 30 times per day</b>	150	32.6	13.5
<b>More than 30 times per day</b>	64	13.9	8.6
<b>Main purpose for using Facebook (multiple selection)</b>			
<b>Keep in touch with friends and family</b>	424	92.2	64.1
<b>Recreational reasons</b>	436	94.8	51.7
<b>Keep record of personal life</b>	334	72.6	44.1
<b>Acquire help in life, education, and work</b>	378	82.2	33.0
<b>Follow current events</b>	342	74.3	32.1
<b>Receive updates on brands</b>	215	46.7	20.3
<b>Make new friends</b>	142	30.9	19.2
<b>Follow celebrities</b>	259	56.3	15.0