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# Influence of information sources on escape judgment with intuition and after deliberation \*



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#### ABSTRACT

We present novel evidence that proves the significant influence of information sources on escape judgment in a crisis situation. These influences are found to differ with intuition and after deliberative thinking. The finding addresses an important gap in crisis decision literature, in which the role of information sources is largely ignored. This omission is striking because crisis situations often involve considerable uncertainty, confusion, and panic. In such situations, the information needed to form judgments is not available. The four experiments we conducted in this study show reliable evidence of the influence of information sources on escape judgment. Experts and acquaintances activated significantly more positive judgments than strangers based on the same information at both the conscious priming level in experiment 1 and at the unconscious priming level in experiment 2. Information sources showed different influences on escape judgment with intuition and after deliberative thinking at both the conscious and the unconscious priming levels. The cross-experimental analysis in experiment 3 confirmed the priming effect of information sources. The control studies in experiment 4 indicated that the results did not reflect word familiarity. Our findings contribute to the crisis literature by demonstrating that information source is more important than information content in escape judgment.

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#### 1. Introduction

Escape judgment is essential for an effective escape under a crisis situation. Imagine yourself choking on smoke inside a shopping mall. What would you do? Regardless of the action you eventually take, the first step always involves judging the situation before taking action.

Despite the importance of judgment, its basic mechanism remains unclear. Although a number of factors that are likely to influence escape judgment has been identified in theoretical work (Bazerman, 1994; Bechara et al., 1997; Damasio, 1994; Forgas, 1995; Kleinmuntz, 1990; Sayegh et al., 2004; Sweeny, 2008), recent experimental work has begun to challenge commonly held opinions on judgment (Dijksterhuis, 2004; Dijksterhuis et al., 2006; Gino and Moore, 2007; Gino and Schweitzer, 2008; Li et al., 2013; Pabst et al., 2013; Pham, 2004; Yaniv and Milyavsky, 2007).

In the present article, we explore the influence of information sources on escape judgment with intuition and after deliberative

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thinking. This work addresses an important gap in crisis decision literature. Prior theoretical (e.g., Gardner and Berry, 1995; Gershoff and Johar, 2006; Klein, 1998; Sweeny, 2008; Sayegh et al., 2004) and experimental works (e.g., Hale et al., 2006; Hung, 2010; Lerbinger, 2012; Leventhal et al., 1984; Li and Gao, 2013; Li et al., 2013; Vries et al., 2008; Xu, 2013) have largely ignored the role of information sources (available pools of persons who may not actively but actually provide cues that influence the information-taking process) in escape judgment. This omission is striking because many judgments are made under uncertainty, confusion, and panic during a crisis (Sayegh et al., 2004), in which judgment would be significantly influenced by several cues if such cues were easier to consider than information content (the information itself). An example is doing what others do in a given situation. Although a number of researchers suggest the different effects of intuition and deliberation on crisis decision-making (e.g., Klein, 1983; Kleinmuntz, 1990; Miller and Toulouse, 1986; Sayegh et al., 2004), only a few of them focus on how information sources influence escape judgment with intuition and after deliberative thinking. The influence of information sources would be different with intuition and after deliberative thinking. For example, people may take information from friends intuitively, but they may shift to take information from an expert after deliberative thinking. In this case, judgments would be totally different.

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We say that the present study addresses an important gap in crisis decision literature, but such gap does not mean the absence of related work in the literature. Our concern on the issue of influence of information sources on escape judgment is derived mainly from crisis decision theory (CDT) (Sweeny, 2008).

Sweeny (2008) contended that people assess the severity of a crisis using many types of information to form a particular judgment. However, this theory does not mention how and why people use certain types of information in forming a judgment. In other words, on what basis do people focus on and choose certain information over others? Determining the basis of preferred information is very important in forming judgment, especially when the types of information convey different contents. According to Weber (1987), many judgments are formed based on the influence of the information source and not on the influence of the information content, particularly when the information is incomplete (Weber, 1987) or when the contexts are emotional (e.g., Bechara et al., 1997; Damasio, 1994). Crisis circumstances often involve considerable uncertainty, confusion, and panic (Li and Gao, 2013; Sayegh et al., 2004). In such situations, the information needed to form judgments is simply not available (Li and Gao, 2013; Li et al., 2013; Sayegh et al., 2004). Furthermore, judgments would be influenced more by other cues (e.g. who provides the information) than by information content. An example is the principle of doing what others do in a given situation, even when the "follow the crowd" effect associated with imitation may have grave consequences (Altshuler et al., 2005; Helbing et al., 2000).

Different levels of crisis severity result in different durations for selecting and adopting information. This time variation in turn influences information taking and judgments. Pabst et al. (2013) argued that acute stress has a rapid time-dependent effect on decision-making and that a few minutes make all the difference. Thus, the use of a particular piece of information among many types of information is greatly influenced by other cues, such as information sources, and greatly depends on the time taken to select the information. However, whether these factors influence escape judgment remains unclear. In all, CDT provides a very useful but incomplete description of judgment under crises. A description relevant to judgment must therefore be specified. The present study attempts to clarify the remaining issues further.

We are particularly interested in the influence of information sources on escape judgment. Specifically, we observe the influence of information sources on escape judgment with intuition and after deliberative thinking. Consistent with prior studies (e.g., Devine, 1989; Ericsson and Smith, 1991; Hyelim and Franke, 2009; Senecal and Nantel, 2004), we define information sources as available pools of persons who may not actively but actually provide cues that influence the information-taking process. The pools of persons comprise experts (e.g., expert and authority), acquaintances (e.g., relatives and friends) and strangers (e.g., strangers and passersby) (see also Gino and Schweitzer, 2008). Various studies claim that judgment and decision-making differ considerably in terms of intuition and deliberation (e.g., Dijksterhuis and Nordgren, 2006; Evans, 2007; Evans, 2008; Glöckner and Witteman, 2010; Holland and de Vries, 2010; Kahneman and Tversky, 1979, 1982; Kahneman, 2002; Kahneman and Frederick, 2002; Kahneman, 2011; Li et al., 2013; Li and Gao, 2013; Williams et al., 2009). According to Evans (2008), intuitive processes can be described as automatic, fast, parallel, effortless, and affective (See also Lieberman, 2000, 2007; Khatri and Ng, 2000), whereas deliberate processes are thought to be accessible to conscious awareness, slow, serial, effortful, and rule-governed. In terms of the duration of information selection, intuition is immediate and speedy (e.g., Bargh and Pietromonaco, 1982; Bargh and Chartrand, 1999; Bargh et al., 1996, 2001; Kahneman, 2003; Dane and Pratt, 2007), whereas deliberation is delayed and slow

(e.g., Bechara et al., 1998; Betsch, 2008; Dane and Pratt, 2009). Escape information in our research is specified as herding behavior (e.g., Altshuler et al., 2005; Helbing et al., 2000; Keating, 1982), and individual action (e.g., Helbing et al., 2000; Li and Gao, 2013) based on which escape judgment is made.

#### 1.1. Hypotheses

Prior studies have shown that advice plays a particularly important role in judgment (e.g., Bonaccio and Dalal, 2006; Gino and Schweitzer, 2008). In many situations, people cannot form judgments based on information content particularly when faced with unfamiliar and complex information, but they have to make judgments according to the trustworthiness of information sources (Dunn and Schweitzer, 2005; Johnson-George and Swap, 1982; McAllister, 1995). Relevant literature suggests that characteristics of both the advisor and the decision task influence how receptive people are to the advice (Bonaccio and Dalal, 2006; Gino and Schweitzer, 2008). For example, people are likely to take information from known experts (Goldsmith and Fitch, 1997; Harvey and Fischer, 1997; Sniezek et al., 2004) and from people who are older, wiser, better educated, or more experienced than their counterparts (Feng and MacGeorge, 2006). People also tend to weigh advice heavily when the decision task is difficult (Gino and Moore, 2007). A crisis situation is full of negative emotions (Sayegh et al., 2004), and researchers suggest that emotions influence the use of information in several ways (Gino and Schweitzer, 2008). For example, the person receiving information may feel an emotion for or related to the person providing the information, or the decision itself may be emotion-based. A previous study identified significant links between emotion and judgment (see Forgas and George, 2001; Isen and Baron, 1991, for reviews). In line with the literature, we explore further the influence of information sources on escape judgment with intuition and after deliberative thinking. We propose the following hypothesis:

**Hypothesis 1.** Escape judgment varies according to information sources, with experts and acquaintances leading to more positive judgment compared with strangers.

Prior studies have also suggested that in critical decisive situations such as a fire emergency, people experience both intuitive reactions and cognitive deliberations during the decision process (Kleinmuntz, 1990; Miller and Toulouse, 1986; Sayegh et al., 2004). The role of intuition is critical in such decision-making processes (Agor, 1986, 1990; Blattberg and Hoch, 1990; Brockmann and Anthony, 1998; De Dreu, 2003; Larrick and Sol, 2006; Suri and Monroe, 2003; Wagner et al., 1999; Walsh, 1995). However, people in some crisis conditions may still have a few minutes or even longer to make judgments and perform comparisons (Hymowitz, 2001). Thus, the role of deliberation is also important in escape judgment. Acute stress has a rapid time-dependent effect on the decision-making process; hence, a few minutes can make all the difference (Pabst et al., 2013). In this case, the influence of information sources on escape judgment could also differ based on intuition and deliberation. We propose the following hypothesis:

**Hypothesis 2.** The influence of information sources on escape judgment differs with intuition and after deliberative thinking.

#### 1.2. Overview of present research

We test our hypotheses in two experiments. In our first experiment, we examine the influence of information sources on escape judgment with intuition and after deliberative thinking at the

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