Optimizing Persuasive Strategies: A Meta-Analysis of the Combined Effects of

Gain-Loss Framing and Evidence Type

ZHI, Meilin 23447575

School of Communication, Hong Kong Baptist University

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Dr. Guangchao Charles FENG

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Evidence types related to content features and message framing constitute two key aspects of researching persuasive effects (Shen & Bigsby, 2013). The former supports the foundational viewpoints, whereas the latter entails the strategic arrangement of this evidence to effectively communicate the desired viewpoints and fulfill persuasive objectives.

These two types of message elements have been extensively studied across various communication contexts and have been proven to effectively construct persuasive messages. However, the relative persuasiveness of gain and loss frames in health communication is small and remains uncertain. Loss frames may be more effective in promoting disease detection behaviors, while gain frames could be more effective for prevention or issues related to risk-averse interventions (Gallagher & Updegraff, 2012; Hameleers, 2021; O'Keefe & Jensen, 2006). Nevertheless, such differences in effects have been shown to be less pronounced within specific disease contexts (O'Keefe & Jensen, 2007; O'Keefe & Jensen, 2009). Furthermore, studies have demonstrated that both gain and loss frames can enhance persuasive outcomes by eliciting corresponding emotional responses (Nabi et al., 2020). Similarly, narratives can reduce emotional resistance to messages, thereby enhancing persuasiveness (Ratcliff & Sun, 2020). However, Freling et al. (2020) found that people do not always prefer narrative evidence. Although this difference exists, the effect size is relatively small, with a Hedges' g of 0.066.

As noted above, results of meta-analyses show that the relative persuasiveness of this two message characteristics is minimal, whether comparing loss and gain frames or narrative versus non-narrative message. Determining the best approach within a single category of message characteristics is challenging because, in reality, the attributes of a message are multifaceted. The persuasiveness of information results from the interplay of various characteristics. Therefore, we must look beyond the simple effects of individual characteristics and explore more conditions to understand the factors that influence their persuasive effectiveness.

Many researchers have already begun to explore the interactions between these two types of message characteristics, investigating how their combinations can be most persuasive. These primary studies are not only studied in health communication but are also studied in marketing, charity, environmental conservation, and other fields. The methodologies of these studies are highly consistent; they explore the effects of message composed of two characteristics: the gain-loss framing and narrative versus non-narrative evidence. These elements are combined in various configurations, ultimately yielding four types of informational design: loss framed with non-narrative evidence, loss framed with narrative evidence, gain framed with non-narrative evidence, and gain framed with narrative evidence. The relative impact of these designs on variables relevant to the persuasion process and outcomes is compared through randomized experiments among participants and self-reported results. However, the results of existing studies have not reached a consensus. Some research indicates that the gain-framed messages combined with non-narrative

message have the most effective impact on behavioral intentions (e.g., Cox & Cox, 2001), while some researchers have found that their interaction with attitudes toward drinking is not significant (Kang & Lee, 2018). Additionally, some studies have observed that while the framing effects are not significant, the interaction between the frame and the type of evidence is significant, revealing more advantageous message designs (Yu, et al., 2010).

These differing conclusions indicate that we should conduct a quantitative synthesis of the existing evidence based on a substantial empirical research foundation. The aim is to address two critical issues: the relative persuasiveness of the strategies within each variable in messages that contain both the gain-loss framing and different types of evidence; and whether there are significant differences between these four message designs.

Therefore, we believe it is necessary to conduct such meta-analyses, not only to consider the interactions of the inherent and complex textual features in the messages on persuasive outcomes but also to systematically study whether related theoretical variables can explain the variations in effect sizes found in existing research. This approach provides insights into more effective persuasive message designs. We first reviewed the development of research on the relative persuasive effects of framing and evidence type, as well as the theoretical basis for their interaction. We also attempted to explore the psychological responses they elicit, which could serve as mediating factors that either amplify or diminish the persuasive effects (O'Keefe, 2003; Tao & Bucy, 2007). Additionally, we considered moderators that are

theoretically related to these variables.

Essentially, this study combines the gain-loss framing with evidence types (narrative and non-narrative) to examine their joint effects on persuasive outcomes and psychological responses. The object is to determine the relative effects of different message designs through meta-analysis, and in doing so, to identify the most effective combination. To obtain comprehensive information for comparison, our study consists of multiple separate meta-analyses, each focused on thoroughly examining the main effects and interactions arising from the framing effects and evidence types.

Literature Review

Gain-loss Framing Effects

The best factor in determining people's decision to act is how the issue is attributed, rather than the objective characteristics of the issue (Rothman & Salovey, 1997). Framing is an attribute of the text, inherently defining problems and offering causal interpretations through the selection and salience of important information (Entman, 1993). Thus, framing can shape people's perspectives on the world and their interpretations of information (Hallahan, 1999). Even when containing the same information, framing the issue differently can influence decision-making behaviors (Rothman & Salovey, 1997). The effect of framing originates from prospect theory (Kahneman & Tversky, 1979), which posits that when facing risky decisions, people's choices depend on their perception of gains or losses from the information. If an