Anecdotal Versus Statistical Evidence in Risk Communication Messages: the Moderating Effects of Comparative Optimism and Message Framing

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Risk communication often contains anecdotal or statistical evidence. Research on the effectiveness of both evidence types reports contractionary findings. Based on construal level theory, this research shows that the moderation of evidence type by message framing depends on comparative optimism. Results reveal that optimists are persuaded by negative anecdotal evidence.

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EXTENDED ABSTRACT

Social marketing messages often seek to persuade individuals to cease or reduce risky behavior, for instance, speeding or smoking (Lee and Kotler 2011). The present study focused on the relative effectiveness of two different evidence types that social marketing messages may use to support their appeals, that is, anecdotal evidence and statistical evidence. Both evidence types appear regularly in risk communication messages. With regard to the relevant question of which evidence type is more effective, the literature reports contradictory findings (e.g., Allen and Preiss 1997, De Wit, Das, and Vet 2008, Greene and Brinn 2003). Thus, it seems relevant to search for conditions under which one of the evidence types may have a persuasive advantage—potentially leading to recommendations when to use anecdotal evidence and when to use statistical evidence.

This research examines the moderating effects of message framing and comparative optimism. Previous research shows that an important driver of risky behavior is comparative optimism (Weinstein and Klein 1996): Some individuals perceive themselves, compared to others who show the same risky behavior, to have a lower risk of experiencing certain negative life events (Armor and Taylor 1998). However, previous research suggests that these individuals are challenging to reach and that statistical evidence may not be effective in persuading this important target group (Czerwinka and Praxmarer-Carus 2014).

The present study compares the persuasiveness of positively and negatively framed anecdotal and statistical evidence in risk communication messages and takes comparative optimism as a potential moderating variable into account. Based on prior research (e.g. White, MacDonnel, and Dahl 2011) it was predicted that the combination of anecdotal evidence and negative message framing as well as the combination of statistical evidence and positive message framing should be easier to process and thus be more persuasive compared to positively framed anecdotal and negatively framed statistical evidence.

Furthermore, it was predicted that this effect would depend on comparative optimism. Based on prior research (e.g. Schwarz 2004), the persuasive advantage of negatively framed anecdotal and positively framed statistical evidence was expected to increase with increasing comparative optimism. Finally, it was predicted that, as comparative optimism increases, the persuasive advantage of negatively framed anecdotal evidence over positively framed statistical evidence should increase. This effect was not expected to occur among non-optimistic individuals.

Hypothesis 1: Message framing and evidence type interact, such that

a. Negatively framed anecdotal evidence leads to higher compliance with risk communication messages than positively framed anecdotal evidence.

b. Negatively framed statistical evidence leads to lower compliance with risk communication messages than positively framed statistical evidence.

Hypothesis 2: Comparative optimism, message framing and evidence type interact:

a. When comparative optimism increases, the persuasive advantage of negatively framed anecdotal evidence over negatively framed statistical evidence increases.

b. When comparative optimism increases, the persuasive advantage of positively framed statistical evidence over positively framed anecdotal evidence increases.

c. When comparative optimism increases, the persuasive advantage of negatively framed anecdotal evidence over positively framed statistical evidence increases.

A study in the context of smartphone usage while driving (N=401) was conducted online. The study used a 2 (evidence type) x 2 (message framing) between-subjects design. Before participants saw one of the messages, comparative optimism was measured as the difference between the personal risk assessment and the risk assessment for a similar other. Respondents indicated their intention to reduce their smartphone usage while driving on a 7-point likeliness scale. A regression-analysis following the procedure for moderated moderation by Hayes (2013) was conducted to test the proposed interaction between evidence type and message framing as well as the moderating effect of comparative optimism. In line with hypothesis 1, results showed a significant interaction effect between evidence type and message framing [b = 3.12, t (391) = 2.897, p = .004].

In addition, the three-way interaction between evidence type, message framing and comparative optimism was significant [b = .65, t (391) = 3.203, p = .002]. Results showed that the conditional effect of the interaction between evidence type and message framing differs depending on comparative optimism. Table 1 reports the estimated values of behavioral intention for two groups: individuals high in comparative optimism and individuals low in comparative optimism (mean +/-1sd).

Further analysis of these estimated values supported the assumption, that negatively framed anecdotal evidence and positively framed statistical evidence is especially persuasive for the highly optimistic target group (hypotheses 2a and 2b). Differences between these estimated values indicated the proposed pattern: the persuasive advantage of negatively framed anecdotal over positively framed statistical evidence increased with increasing optimism (hypothesis 2c).

The current study contributes to previous research on the effectiveness of anecdotal and statistical evidence as it sheds light on conditions for the persuasive effect of the two evidence types. In addition, this research advances knowledge on information processing as it shows the influence of comparative optimism on information processing. Findings suggest that social marketers should use negatively framed anecdotal evidence in their risk communication messages, when the target group is highly optimistic. This may particularly be the case for risky behaviors individuals perceive as highly controllable by taking preventable actions (Weinstein 1984), such as speeding, smoking, binge drinking, sexually transmitted diseases and the like.
REFERENCES


