Influence of Self-Relevant Base-Rate Information on Risk Perception of Getting Depression

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One of the greatest challenges in advertising health-related information is overcoming the target audiences’ self-positivity bias (the tendency for people to believe that they are less vulnerable to disease than others). The present research demonstrates that offering self-relevant base-rate information can reduce this bias and engage people in more precautionary thinking. Three studies examined the effect of base-rate information on the risk perception of getting depression. Study 1 showed that offering base-rate information did not influence an individual’s risk perception because base-rate information serves as social level information. However, offering personal level information can influence the risk perception of getting depression and decrease the level of self-positivity bias. Study 2 examined the individual’s perception of relevant base-rate information and demonstrates that depressed individuals adjust their self-risk estimation upwards when they think the base-rate information is related to them, but revise it downward when they think the base-rate information is not related to them. In addition, self-positivity bias decreased when non-depressed individuals believed that the base-rate information was related to them. Study 3 directly manipulated the level of base-rate relevance and replicated the findings of study 2. In addition, study 3 shows that the effect of message cues (base-rate relevance) on self-positivity bias are mediated through perceptions of base-rate relevance perceptions. Implications for health-care marketing are provided.

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The three negative emotions measured have a relatively high correlation (Cronbach’s alpha=.90), and were averaged to indicate how negative the sad story made participants felt. Helmert contrasts were conducted first and showed that after participants put the emotional laden materials into the envelope (M=2.90), the negative emotions they felt were significantly less than the rest two conditions (F(1, 77)=3.89, p<.05). However, the difference between the control condition and the experimental condition where participants were asked to put an unrelated task to the envelope did not differ on the reported emotional states (Mcontrol=4.28, Munrelated=4.12, F(1, 77)=.32, p>.80).

It is known that the body is closely tied to the processing of emotional information (Niedenthal et al., 2009). Therefore, it is reasonable to expect that bodily experience may also be pivotal in the regulation of emotions. While supporting theories on embodied cognition and embodied emotion, our results took one step further to show that people’s emotion regulation process can indeed be facilitated by taking a physical action on the emotional laden materials. The experiments demonstrated that the abstract mental state such as psychological closure over an event appeared to rely on the sensory-motor experiences brought by the simple act of enclosing.

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The aim of this current research is to examine the influence of base-rate information on risk perception in the context of depression. The issue of depression has gained the attention of social marketers and researchers all over the world (e.g., Fontaine & Jones, 1997, Nelson & Craighead, 1977, Tennen & Herzberger, 1987), and has a high incidence in the population studied. The question is whether or not providing this population with the base-rate information on the incidence of depression will be effective to get them to seek help. Therefore, this question is the focus of this paper.

The theoretical framework of this study is based on the impersonal impact hypothesis, which proposes that people’s general risk perception may be heightened by the relative information provided, but their personal risk judgments are not (Weinstein, 1989; Tyler & Cook, 1984). Therefore, the purpose of study 1 is to demonstrate that offering social level information such as base-rate information doesn’t influence an individual’s risk perception, but the personal level information such as the level of depression can indeed influence the risk perception of getting depression and decrease the level of self-positivity bias. Study 2 will examine the individual’s perception of the relevance of the base-rate information to see if different levels of self-relevant perception affect their estimations of own risk and other risk of getting depression. While study 2 examines the perception of the relevance to the base-rate information, Study 3 directly manipulates the level of base-rate relevance to see if more self-relevant base-rate information draws the attention of participants to their risk of getting depression and so decreases the difference between their own risk and other’s risk of getting depression.

Method
Study 1 examined the effect of social level risk information and personal level risk information on self-risk perception, the updating of self-risk estimates and on the level of self-positivity bias for getting depression. We predict that base-rate information serves as social level risk information and will not change self-risk perception of getting depression, and will remain at the same level of self-positivity bias. However, the result of self-diagnosis inventory serves as a personal level risk judgment and will increase an individual’s risk perceptions, and will help to reduce the level of self-positivity bias. At the same time, Study 1 also examines the effect of social level risk information and personnel level risk information on an individual’s willingness to update his/her self-risk estimates. A 3 (estimate: self initial / other/ self updated) x 2 (social level risk information—base-rate: present vs. absent) x 2 (personal level risk information—level of depression from self-diagnosis inventory: low vs. high) mixed design was used in this study. Seventy-eight undergraduate students participated in this study.

Study 2 proposes that self-relevant perception of the base-rate information will affect people’s risk perception and the updating of their self-risk as well as the level of self-positivity bias. We predict that if people think that base-rate information is not relevant to them, they will continue to hold their self-positivity bias, and they will not update their self-risk estimation after they know the BR information for depression. On the other hand, if they think that the base-rate is related to them, then they will pay more attention to this information and will be prepared to update their self-risk estimation and their self-positivity bias will decrease as well. Study 1 showed that the level of depression plays an important role in risk perception and self-positivity bias. Therefore, study 2 will examine the effect of self-relevant perception of the base-rate information on the risk estimations between depressed and non-depressed groups. A 3 (estimate: self initial / other/ self updated) x 2 (self-relevant perception: low vs. high) x 2 (level of depression: high vs. low) mixed design was used in study 2, with the estimating factor manipulated within-subjects, and the remaining factors measured between subjects. One hundred and seventeen undergraduate university students participated in study 2.

Study 3 examines the robustness of these results by directly manipulating the level of base-rate relevance. A 3 (estimate: self initial / other/ self updated) x 2 (self-relevance to base-rate information: low / high) x 2 (level of depression: high / low) mixed design was used in this study, with the estimating factor manipulated within-subjects, base-rate relevant manipulated and level of depression measured between subjects. One hundred and seven undergraduate students participated study 3.

Conclusion
The present study examined the effect of base-rate information on risk judgments about depression. In practice, social marketers provide different risk information to influence the risk perception of their target audiences. However, recent studies on information processing show a different view of the effects of base-rate information on self-positivity bias (e.g., Lin et al., 2003; Lin & Raghubir, 2005). The present research echoes the findings of previous researches. Study 1 showed that since base-rate information serves as a social level risk information, providing this base-rate information does not change self-risk perception of getting depression, nor the level of self-
positivity bias. However, more personal information such as the result of self-diagnosis inventory increased individuals’ risk perceptions and helped to reduce the self-positivity bias. That is to say, non-depressed individuals showed self-positivity but depressed individuals showed realism on the risk perception of getting depression (i.e., “depressive realism”; Tennen & Herzberger, 1987). Built on the findings of study 1 and the impersonal impact hypothesis (Tyler & Cook, 1984), study 2 and study 3 showed that if people believe that the base-rate information is highly relevant to them, then this more self-relevant base-rate information can work the same as personal level information. For depressed individuals, providing higher relevant base-rate information increased their risk estimations for getting depression and they showed realism regarding their own chances and those of others of getting depression. For non-depressed individuals, even when they did not show a significant difference for their self-risk between low and high base-rate relevant conditions, they did lower their self-positivity bias when they thought that the base-rate information was more relevant to them. At the same time, the results also showed that relevant perception of base-rate information served as a mediator between base-rate information and risk perception, especially for non-depressed individuals, which provides further evidence that more relevant base-rate information affects an individual’s risk perception.

The results of our study also showed that base-rate information affects an individual’s self-risk updating. Depressives, who typically have a pessimistic outlook on life, have been shown to be realistic about accepting their likelihood of risk (“depressive realism”; cf. Alloy & Abramson, 1979; see Ackermann & DeRubeis, 1991 for a review). They view their life and future in negative terms (Beck, 1967, 1976). Their absolute estimates reflect pessimism, and their relative estimates reflect self-negativity or realism rather than self-positivity (Keller, Lipkus & Rimer, 2002). The results of the present research reflect this pattern. Depressed individuals were realistic once they knew their chances of getting depression, therefore they did not update their risk perception according to the base-rate information (study 3). Even if they did update, their self-risk estimations would be based on their judgments of the base-rate. With other words, if they thought that the base-rate information was not relevant to them, then they decreased their self-risk estimations, but they increased their self-risk estimation if they thought that the base-rate information was more relevant to them (study 2).

Non-depressed individuals, on the other hand, are defined as those whose estimates reflect an absolute level of positivity (i.e., they believe that they are less at risk for a negative event and are more likely to experience a positive event, than they actually are). In the meantime, they tend to have a high self-esteem (Lin et al., 2003; Lin & Raghubir, 2005). Therefore, when they were told the base-rate information, they tended to lower their risk estimations (study 3). More specifically, when they thought that the base-rate information was related to them, they tended to lower their self-risk estimation of getting depression (study 2) in order to maintain their self-esteem (Lin et al., 2003; Lin et al., 2004; Lin & Raghubir, 2005). Although, they would not admit that their risk of getting depression would be higher than they expected once they were given the base-rate information, they tended to lower their self-risk perception. The base-rate information made the non-depressed individuals notice their risk of getting depression in relative level.

References

What You Buy Affects How Old You Feel
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Fashion consumption is a means for consumers to express and display themselves. Personal possession of fashion clothes or accessories could be considered as an extension of the self (Belk 1988). Therefore, fashion consumption is closely related to a consumer’s self concept, and many researches have discussed this issue (e.g., Banister and Hogg 2004; Grant and Stephen 2005; Phau and Lo 2004). However, in the past, the researches regarding to self concept and fashion consumption were seldom involved with cognitive age. Actually, the perception of one’s age is indeed part of self image (Guptill 1969). Consumer will behave based on their cognitive ages (Kastenbaum, Derbin, Sabatini, and Artt 1972; Stephens 1991; Wilkes 1992), and accordingly, they have their thoughts about what fashion is and what