

Factors influencing the illusion of knowing in science issues: Comparing the role of media attention, interpersonal communication, and elaborative processing in the United States and South Korea

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Background: Science knowledge can play an important role in shaping beliefs about the promise of scientific breakthroughs for bettering human existence and generating support for public policy initiatives for scientific development. This study examines whether attention to science issues (i.e., nuclear and GMO technology) in the media, interpersonal communication, and elaborative processing play a role in increasing or decreasing the illusion of knowing (IOK). The discrepancy between factual knowledge (i.e., what people know about a particular topic) and perceived knowledge (i.e., what people *think* they know about a particular topic) can be called the *illusion of knowing phenomenon*. It may be a source of news media power. It is hypothesized that news media exposure will increase the IOK. Also, this study assumes that interpersonal communication and elaborative processing will be associated with the IOK.

Methods: To test the prediction and whether the illusion of knowing can be generalized across cultures, two surveys of college students were using the U.S. sample (n = 313) and South Korea sample (n = 346) between December 2013 and January 2014. The IOK can be measured: z -transformed scores of factual scientific knowledge were subtracted from z -transformed scores of perceived scientific knowledge. The study's hypotheses were tested using separate hierarchical linear ordinary least squares regression of the independent measures on the illusion of knowing.

Results: Media attention such as newspaper reading and television watching increased the IOK in the US respondents, while media exposure was not significantly correlated with the IOK in South Korean respondents. In the US respondents, interpersonal communication decreased the IOK and elaborative processing increased the IOK. In the South Korean respondents, however, these two predictors were not significantly associated with the IOK. But, the bivariate correlations between predictors and the IOK are significantly correlated in both countries.

Conclusions: Despite limitations associated with student samples, these findings provide support for the argument that communicative forces such as media use and interpersonal communication can play an important role in increasing or decreasing the IOK in the United States, and this idea cannot be generalized across cultures. Personal interest in science also influences the IOK and mediates the effect of media use and reflective integration on the misperceived knowledge about science. Thus, the intervening role of interest in explaining the relationship between communication and the IOK can have conceptual linkages with micro-level theoretical perspectives (i.e., uses and gratifications theory) for explaining media effects.