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The Effects of Threats to Meaning on Attitudes Toward Evolution

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Introduction

Humans have an innate need to make sense of the world—to give it meaning (Heine, Proulx, & Vohs, 2006). We create and reaffirm this sense of meaning through cultural worldviews (Solomon, Greenberg, & Pyszczynski, 2004).

Threats to our meaning cause existential anxiety, and to protect ourselves from this existential fear, we reject, eliminate, or avoid threats to our cultural worldviews (Schmeichel & Martens, 2005). In addition to these actions, when our meaning is threatened, we are provoked to compensate by showing aggression towards those who are dissimilar (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

Most pertinent to the current study, when our meaning is threatened, we bolster our cherished beliefs or meaning systems as a way of regaining meaning (Van Tongeren & Green, 2010). That is, meaning threats intensify our original beliefs and can make us more defensive.

Science and religion are two prominent cultural worldviews that can provide meaning. Some individuals, particularly those high in religious fundamentalism, may perceive the science and religion as incompatible and competing meaning systems (Poling & Evans, 2004).

Thus, we predicted that following a meaning threat, participants high in religious fundamentalism would report a less favorable attitude toward evolution than those low in religious fundamentalism as a way of reaffirming their original beliefs.

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Method

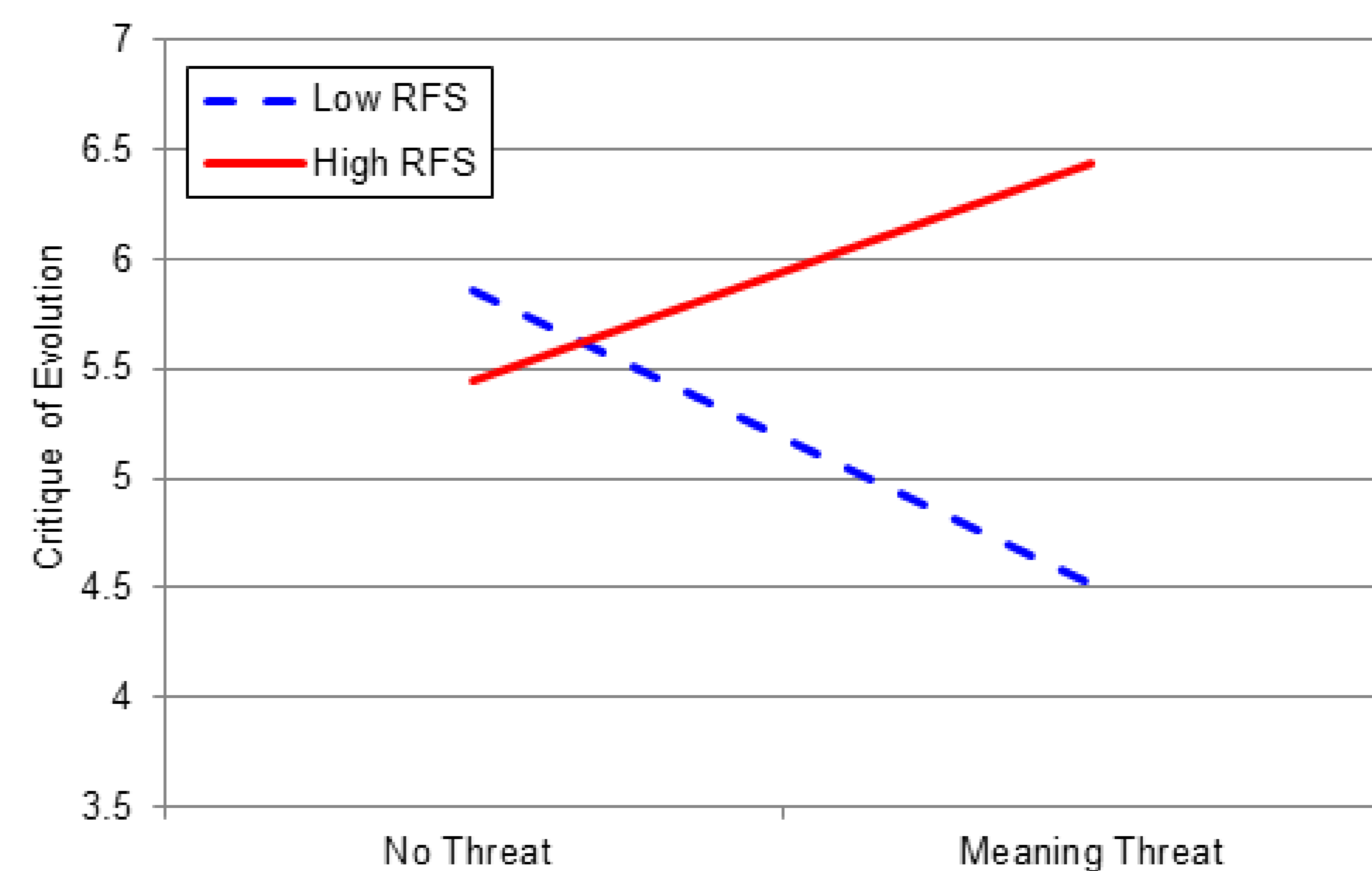
Participants ($n = 55$; 17 males and 37 females) were self-identified Christian undergraduate students enrolled in an introductory psychology course at a small, private liberal arts college in the Midwest. Participants first completed the Religious Fundamentalism Scale (RFS; Altemeyer, & Hunsberger, 1992).

Next, they were randomly assigned to one of three priming conditions:

1. a meaning threat induction (i.e., writing about the ways in which their life lacked meaning)
2. a meaning affirmation induction (i.e., writing about the ways in which their life is full of meaning), or
3. a neutral control condition (i.e., writing about their plans for next week).

Following this, participants read an essay purportedly from *Nature* that detailed how a recent archeological discovery has provided mixed evidence for the theory of evolution—some scientists view this as evidence in support of evolution and other scientists view this discovery as undermining previously valid evidence for evolution.

Finally, participants responded to a series of questions about the essay. Four items ($\alpha = .77$) were averaged to form a “critique of evolution” index, such as “I am interested in learning more about the positions that criticize or critique evolution” and “The essay provided strong, convincing evidence against evolution.”



Results

Because we predicted that those high in religious fundamentalism would report more negative attitudes toward evolution than following a meaning threat relative to those low in religious fundamentalism, we:

1. combined the affirmation and neutral condition into a “no threat condition” and
2. examined the interaction between religious fundamentalism and priming condition on attitudes toward evolution.

The interaction between meaning threat (vs. non-meaning threat) prime and religious fundamentalism was significant, $\beta = 1.70$, $SE = .30$, $t = 3.30$, $p = .002$. Although religious fundamentalism was unrelated to critique of evolution in the absence of a meaning threat ($\beta = -.14$, $p = .361$), when meaning was threatened, greater religious fundamentalism was related to stronger critique of evolution, $\beta = .67$, $SE = .23$, $t = 3.52$, $p = .001$.

Further comparisons revealed that the meaning threat marginally increased critique of evolution for participants high in religious fundamentalism (+1 SD), $\beta = .32$, $SE = .52$, $t = 1.91$, $p = .061$, whereas it significantly reduced critique of evolution for participants low in religious fundamentalism (-1 SD), $\beta = -.44$, $SE = .50$, $t = -2.62$, $p = .010$. That is, the meaning threat elicited attitude polarization on views of evolution depending on one’s degree of religious fundamentalism.

Conclusions

There was an interaction effect demonstrating that religious fundamentalists were more critical of evolution when their sense of meaning was challenged, and those low in religious fundamentalism were less critical of evolution. Given that religious fundamentalists have been found to hold negative attitudes toward evolution (Poling & Evans, 2004), meaning threats may enhance these negative attitudes as a way of regaining meaning. On the other hand, those low in religious fundamentalism viewed evolution more positively following a meaning threat. These results highlight that, following threats to meaning, individuals bolster different sources of meaning that are aligned with their values, presumably to regain meaning in life. Furthermore, it highlights how negative attitudes toward evolution may be fueled by a desire to maintain meaning in life, at least for those high in religious fundamentalism.