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Religious behaviors can be time-consuming (e.g., praying multiple times a day), physically demanding (e.g., fasting, pilgrimage), and/or expensive (e.g., sacrificing animals, tithing), and they often fail to provide obvious fitness benefits. Yet natural selection has not removed these costly behaviors. Indeed, religious behaviors are universal. Why? One proposed explanation is costly signaling.

Costly signaling, a theory derived from evolutionary biology, states that costly behaviors reliably signal underlying traits. For example, gazelles may energetically jump into the air when predators approach. This behavior is costly because the gazelles expend energy moments before potentially running for their lives. However, only fit individuals can bear this cost and thus their behavior signals to predators that they are fast and healthy – and thus not worth chasing!

In the tradition of applying biological theories to human psychology, costly signaling may explain religious behavior: Costly religious behaviors are signals of commitment to a religious group, indicating a willingness to follow the group's moral code and to cooperate with other group members. Religious signalers should benefit by winning the trust of their group members. Furthermore, groups full of costly signalers may be especially trusting and cooperative, allowing them to out-compete other groups and resulting in the spread of religious signaling via cultural evolution.

In a series of studies, we found that fictional target individuals who performed costly religious behaviors (i.e., “costly signalers”) were rated as more trustworthy than their non-signaling counterparts. This was the case with a variety of targets – Christians, Catholics, and Muslims – and a variety of participants, including Christians, Catholics, Muslims, and nonbelievers. Our research thus provides some support for the costly signaling theory of religious behavior.

Our results do not support all aspects of the theory, however. Costly signaling theory states that religious behaviors signal commitment to one's religious group. One would therefore expect costly signaling to increase perceived trustworthiness when the signaler is judged by religious ingroup members, but to have no effect on or even decrease perceived trustworthiness when the signaler is judged by religious outgroup members. However, our costly signaling targets are consistently rated as more trustworthy both by participants who share the target's religious affiliation and those who do not. Our results therefore suggest that religious costly signaling increases trust both within and between religious groups. Costly signaling theory also states that costly religious behaviors produce more reliable signals than cheap religious behaviors. One would therefore expect costly religious behaviors to boost trust to a greater degree than uncostly religious behaviors. However, in our research, cheap religious behavior apparently boosts trust to the same degree as costly religious behavior.

We will discuss the ways in which our research findings both support and contradict the costly signaling theory of religious behavior. We argue that the costly signaling theory of religious behavior is useful, but needs a reformation.