

Selective reading and selectionist thinking: Why violence has been, and should be, important to the cognitive science of religion

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We agree with Martin and Wiebe that CSR researchers would benefit from the insights of ethnographers and historians and we commend them for drawing attention to both the prosocial and violent aspects of religion, as we think both are crucial for understanding religion's role in human sociality. Here we stress this point by drawing attention to the socioecological conditions under which we expect violence associated with religion to occur between, as well as within, groups.

We begin, however, by noting that Martin and Wiebe's reading of the CSR literature is selective; despite their protestations, violence has been a topic of considerable interest to CSR researchers for some time. In fact, major contributors to CSR including Scott Atran, Dominic Johnson, and Harvey Whitehouse have all written books and numerous articles focusing on the violent side of religion (e.g. Atran 2003, 2010; Johnson 2008; Johnson and Reeve 2013; Johnson and Toft 2014; Whitehouse 1995, 1996; Whitehouse and McGuinn 2013). The second author of this commentary has also written various pieces that aim to explain religious violence (e.g. Alcorta and Sosis 2013; Sosis 2011; Sosis and Alcorta 2008; Sosis *et al.* 2007; Sosis *et al.* 2012). And most notably, Norenzayan, who takes the brunt of Martin and Wiebe's criticism concerning CSR's alleged prosociality bias, has published several important papers on religious violence (e.g. Hansen and Norenzayan 2006; Ginges *et al.* 2009). All of this literature was curiously ignored in the target article. In light of Martin and Wiebe's concern that Templeton is leading CSR's supposed "Kumbayah" festivities, we should also point out that Templeton has funded all of these researchers. Ultimately, to assess Martin and Wiebe's contention, we recommend a systematic meta-analysis to determine whether a prosociality bias genuinely exists in the

CSR literature. Argumentation without the support of carefully collected data is subject to a whole host of pitfalls, not the least of which is the tendency to find support for one's ideas due to confirmation biases (Nickerson 1998).

For the sake of this discussion, however, we entertain the possibility that there is a disproportionate focus on prosociality by CSR scholars and consider the source of such a bias. Rather than machinations of Templeton, we suspect the substance of Martin and Wiebe's alleged prosociality bias may be the result of CSR's recent encounter with selectionist thinking (Bulbulia *et al.* 2008; Sosis 2009). Evolutionary scientists recognize that we live in a world of finite resources and consequently all organisms compete over those resources (e.g. energy and mates) or the means to them (e.g. territories). Conflict and competition between individuals—from mothers and their offspring, to members of opposing warring parties—are therefore inherent to all possible dyadic interactions. Conversely, cooperation in such a world is unanticipated and hence its presence and persistence are puzzling. Thus, for those within CSR who engage in adaptationist investigation, an interest in the prosocial aspects of religion derives from the fact that high levels of prosociality among non-kin are rare across species (although not absent, West *et al.* 2012), yet clearly evident among humans.

When religions are understood to confer benefits and costs to individuals within specific socio-environmental contexts, explanations for both the prosocial and conflictual aspects of religion are drawn into sharp focus. Understanding how conflicts of interest among individuals are resolved or minimized is essential to any explanation of religious prosociality. Various theorists have suggested that resource benefits available to the members of religious groups can be protected from freeriders when individuals pay costs for group membership (Bulbulia 2004; Iannaccone 1992; Irons 2001; Sosis 2003). These costs vary ecologically and are expected to increase as a function of the quality of collective resources they are protecting, and the risks of exploiting these resources via freeriding. As countless ethnographers have documented, these membership costs, typically in the form of initiation rites, often entail substantial violence inflicted by other ingroup members (e.g. Alcorta 2006; Tuzin 1982; Whitehouse 1996).

This approach, commonly referred to as the costly signaling theory (CST) of ritual, may at first glance seem to disproportionately focus on the prosocial benefits of religions. However, as many have noted, cooperation is often an effective means of competition (e.g. Alexander 1987). And indeed, much research that has applied signaling theory to religion has focused specifically on how the prosocial consequences of religious signaling facilitate intergroup violence and warfare (Ginges *et al.* 2009; Matthews *et al.* 2013; Johnson and Reeve 2013). For example, in environments with high levels of intergroup warfare, where

cooperation in defense and raiding is critical, rituals are the most violent and extreme (Sosis *et al.* 2007). High levels of ingroup prosociality, it appears, can be driven by socioecological variance in the frequency of outgroup violence. Rather than viewing religion as a cause of warfare, these findings suggest that warfare may motivate an increase in the intensity of religious commitments, including violent rituals and initiation rites.

Signaling theory emphasizes that the costs and benefits of religious displays are not equal for all members of societies. Notably, the signaling approach focuses attention on the role of environmental contexts and variables, such as economic and political stratification, in shaping the costs and benefits of ritual behavior. Quantitative ethnographic studies have shown that those at the top of social hierarchies benefit at the expense of those at the bottom in various ritual venues (Shaver 2014; Shaver and Sosis 2014). Although payoffs vary according to socioecological context, in general, there are at least four ways in which payoffs may be influenced by variance in social stratification. First, if all individuals invest in ritual behavior to the same extent, high status individuals may receive more benefits. Second, if all members receive similar benefits, high status individuals may pay fewer costs. Third, when high status individuals manipulate ritual systems they can exclude low status individuals from participating altogether. Finally, high status individuals can manipulate religious systems so as to decrease the incentives for participation by low status individuals. These differential payoffs to ritual behavior can serve to justify and perpetuate inequalities in power and access to resources, and serve as a source of violence against ingroup members.

While there is considerable evidence of religious proscriptions contributing to violence against ingroup members, we are skeptical that religions are the *cause* of violence between groups (Purzycki and Gibson 2011). Intergroup conflict is primarily, although not exclusively, the result of resource competition (Johnson and Toft 2014). When intergroup conflicts involve religious sensibilities, religion's primary role is to motivate ingroup members to engage in outgroup violence. Religions are particularly effective in this regard as they impose a moral framework on believers which allows leaders to reframe political or economic struggles in religious terms (Sosis and Alcorta 2008). Leaders are thus able to motivate others to sacrifice themselves for a religious cause that appears divorced from material self-interest. Moreover, when benefits are cast in terms of eternal rewards, religions can alter cost-benefit calculations to help justify violence against outgroups (Sosis *et al.* 2012).

We conclude with one final point of clarification. As noted above, political and economic stratification are important for shaping the payoffs to religious behav-

ior, and these differential payoffs can explain violence that is disproportionately perpetuated against some ingroup members. We therefore strongly agree with Martin and Wiebe that political institutions and economic factors are important for understanding violence. However, separating the economic and political features of societies from other contextual factors stems from a confusion about selective processes. Evolutionary models, such as the signaling and life history models discussed above, assume that environments—that is, everything external to organisms—determine how genotypes become manifest as behavioral phenotypes, and the phenotypic variants that will be favored by selection (e.g. Sosis and Bulbulia 2011). In other words, while we are well aware that political and economic models of religious violence do not require evolutionary underpinnings to offer powerful predictions, or even coherence, political and economic determinants of religious behavior certainly are not mutually exclusive to evolutionary explanations; indeed, they are critical to them.

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