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The social functions of group rituals

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Abstract

Convergent developments across social scientific disciplines provide evidence that ritual is a psychologically prepared, culturally inherited, behavioral trademark of our species. We draw on evidence from the anthropological and evolutionary science literatures to provide a psychological account of the social functions of ritual for group behavior. Solving the adaptive problems associated with group living requires psychological mechanisms for identifying group members, ensuring their commitment to the group, facilitating cooperation with coalitions, and maintaining group cohesion. The intersection of these lines of inquiry promises to provide new avenues for theory and research on the evolution and ontogeny of social group cognition.

*Keywords:* Cooperation; cultural evolution; cultural transmission; social group cognition; ritual
The social functions of group rituals

Ritual is a psychologically understudied yet pervasive feature of human social group behavior. The topic of ritual has received relatively little empirical attention from psychologists because of the historical separation between the disciplines of psychology and anthropology. The complexity and diversity of ritual has also impeded our understanding of the recurrent features of ritual behavior (Rossano, 2012). This has made it difficult to generalize about the causes and effects of rituals on social cognition and behavior.

Definitional debates over the nature of ritual abound in the anthropological and religious studies literatures (Boyer & Liénard, 2006; Humphrey & Laidlaw, 1994). Many theories have attempted to explain two aspects of ritual: belief and action, both in isolation and in interaction (Bell, 1992). Whereas religious beliefs are part of many group rituals, ritual is the “ground from which religious conceptions spring” (Rappaport, 1999, p. 3). While the contents of rituals vary within and between cultures, there is a universal form to rituals that makes them distinct from everyday actions.

Here we take a cognitive and functional approach to examining ritual. We define ritual as socially stipulated, group conventions (Legare & Souza, 2012). Although widely used across cultures for a variety of functions, rituals are opaque from the perspective of physical causality (i.e. there is no clear physical causal mechanism by which they are expected to have effects) (Humphrey & Laidlaw, 1994; Legare, Wen, Herrmann, & Whitehouse, 2015; Watson-Jones, Legare, Whitehouse, & Clegg, 2014). Thus, when engaging in ritual, the focus of the behavior is on the process rather than the product. The combination of causal opacity and social stipulation inhibits individual level innovation and makes rituals ideally suited to high fidelity cultural transmission over time (Legare & Nielsen, 2015).
There is a long tradition of research in the anthropological and sociological literatures arguing that rituals serve social functions, such as creating social cohesion and promoting shared beliefs (Whitehouse & Lanman, 2014). Durkheim’s (1915) seminal work on the “elementary forms,” or building blocks, of religion emphasized the role of ritual in strengthening group cohesion. More recently, Rappaport (1999) has argued that rituals are “the social act basic to humanity” (p. 26). Recent psychological research has provided empirical support for this claim (Xygalatas, Roepstorff, & Bulbulia, 2011).

Our objective is to draw upon evidence from the anthropological and evolutionary science literatures to provide a psychological account of the functions of ritual in social group behavior. Solving the adaptive problems associated with group living required psychological mechanisms for identifying group members, ensuring commitment to the group, facilitating cooperation with coalitions, and maintaining group cohesion. We present evidence that rituals facilitate coordinated and cooperative group action, one of the greatest challenges of group living (Cosmides & Tooby, 2013).

THE FUNCTIONS OF RITUAL IN SOCIAL GROUP BEHAVIOR

Group membership has been essential to solving important human adaptive problems. Living in groups decreased predation risk (Shultz, Noe, McGraw, & Dunbar, 2004), allowed for coordinated caretaking of offspring (Hawkes, 2014) and facilitated technological innovation (Reader & Laland, 2002). Group living had such adaptive value that many have hypothesized that it contributed to the evolution of larger than average primate brains (Dunbar & Shultz, 2007), species-specific cultural complexity (Boyd, Richerson, & Henrich, 2011), and a variety of psychological adaptions for social interaction (Kurzban & Neuberg, 2005). Individual fitness benefitted from psychological mechanisms that increased social cohesion and facilitated
coordinated problem solving (Dunbar & Shultz, 2007). For example, the capacity to understand the intentions of others, to track social relationships, and to form coalitional alliances all aid in cooperation with in-group members.

The capacity to engage in cooperation is a necessary but not sufficient prerequisite for participation in goal-directed coalitional alliances (Cosmides & Tooby, 2013). Despite the benefits of forming and maintaining coalitions, forming large groups poses problems such as the coordination of group members for joint action, ensuring commitment of individuals to group goals, preventing free-riding, and preventing defection to rival coalitions. These additional adaptive problems required the evolution of psychological mechanisms to solve them (Chudek & Henrich, 2011). We propose that rituals solve adaptive problems associated with group living by:

(a) identifying group members

(b) demonstrating commitment to in-group values

(c) facilitating cooperation with social coalitions

(d) increasing social group cohesion

**Identifying Group Members**

Familiarity reduces aggression and creates a tolerant context that is the foundation of any cooperative relationship. Under conditions in which social networks extend beyond familiar others, however, a proxy measure for familiarity is required that reliably predicts membership in the same group. Phenotypic similarity (visibly similar traits) is one such measure. Individuals who grow up within the same community are likely to be similar on a number of dimensions, thus making phenotypic similarity an honest signal of group membership. Similar individuals are more likely to share relevant behavioral tendencies (Antal, Ohtsuki, Wakeley, Taylor, & Nowack, 2009). The need to determine potential coalition members has resulted in a preference
for similar others. This preference has allowed humans to identify potential coalition members who are more likely to cooperate.

Because rituals are group-specific, socially stipulated actions, they are an extremely effective means of demonstrating phenotypic similarity and thus allow individuals to determine potential cooperators in extended networks. For example, engaging in approved social etiquette and participating in group-specific ceremonies allows identification of in-group members. Rituals provide a signal that individuals share similar beliefs and values and therefore are more likely to be trustworthy reciprocators. Thus, markers of group membership, such as rituals, provide an indication of one’s “behavioral type,” facilitating affiliative and cooperative interactions (McElreath, Boyd, & Richerson, 2003, p. 127).

Rituals identify the members of the group that can be trusted in future interactions. Markers of group membership can, however, be exploited by free riders (i.e., those who fail to contribute to the success of group goals, but nonetheless attempt to share the benefits of the group’s success). Thus, mechanisms must be in place to ward off exploitation (Tooby, Cosmides, & Price, 2006). One way to ward off potential exploitation is by selectively trusting individuals that demonstrate commitment to the group.

**Demonstrating Commitment to In-Group Values**

For cooperation to be maintained within a group, group members must be able to distinguish cooperators from free riders. Rituals often include seemingly costly actions that operate as reliable, “hard-to-fake,” signals that convey the signaler’s commitment to the group. Rituals can be hard-to-fake both in terms of energy and time expenditure associated with performing the ritual as well as in terms of painful and dangerous ritual activities. Sosis and Alcorta (2003) argue that hard-to-fake ritual signals promote trust and affiliation among group
members. For example, the longevity of religious communes is related to the amount of costly rituals in which group members are required to engage (Sosis & Bressler, 2003). Because costly rituals signal commitment to the group, the more rituals involved, the longer the groups tend to exist.

We propose that humans are motivated to engage in ritual as a means of in-group affiliation (Legare & Watson-Jones, 2015). In Henrich’s (2009) model of social learning, costly rituals act as credibility enhancing displays (CREDs) that provide evidence of an individual’s commitment to in-group values. Verbally expressed beliefs and commitments are especially susceptible to deception, so humans have likely evolved cognitive mechanisms that privilege behavioral commitment over verbal commitment (Henrich, 2009). Rituals are salient evidence of behavioral commitment to groups. When rituals are costly to perform, in terms of time, energy expenditure, pain, and sacrifice, they act as signals of commitment to group values (Xygalatas, et al., 2013).

**Facilitating Cooperation with Coalitions**

Humans are extraordinarily adept at cooperation and are willing to interact with and invest resources in non-kin and even complete strangers (Wobber, Herrmann, Hare, Wrangham, & Tomasello, 2014). Whereas genetic relatedness facilitates cooperative alliances and helping behavior (Hamilton, 1964), adaptations for non-kin cooperation could have evolved through various routes, such as mechanisms for tracking exchanges with other group members (Tooby, et al., 2006), and mutualism, in which individuals mutually benefit from the activity of others (West, El Mouden, & Gardner, 2011). This allows cooperative behavior in coalitional alliances (cooperation amongst three or more individuals) with non-kin. Psychological adaptions for
forming and maintaining coalitions result in selective cooperation with in-group members (i.e., individuals that interact with one another over extended periods of time).

Rituals facilitate coordinated group activity. Cooperative behavior often involves incurring a cost to the self in the expectation that the cost will outweigh the benefits provided by collective action. There is growing evidence that, through signaling group commitment, rituals may contribute to cooperative behavior with in-group members. Individuals who demonstrate commitment to in-group values through ritual participation are more likely to be trusted in cooperative endeavors. Ruffle and Sosis (2003) conducted research with men living in an Israeli kibbutz and found that religious males who engaged in public religious rituals were more likely to cooperate in an economic game than secular males. Relatedly, adherents of a Brazilian religious community (Candomble) who reported greater religious commitment were more likely to behave generously in an economic game and were more likely to be the recipients of cooperation from other group members (Soler, 2012).

**Increasing Group Cohesion**

The term social cohesion implies that people can think and act as a group. Because rituals involve shared experiences among group members that often require personal sacrifice, rituals may contribute to increased social cohesion and foster the longevity of social groups (Whitehouse & Lanman, 2014). As populations increased in numbers of non-kin over human history, rituals have allowed social groups to remain cohesive, while reducing the need for physical and social intimacy and proximity across time. Indeed, recent evidence suggests that ritual relationships are “far more associated with interaction [between bands] than is kinship” in small-scale societies and inter-band interaction rates have been linked to non-kin cooperation (Hill, Wood, Baggio, Hurtado, & Boyd, 2014, p. 4).
Rituals reduce individual-level conflicts inherent in group living, a necessary condition for achieving coalitional goals. Although there have been mixed results in recent research, there is evidence that engaging in synchronous movement (even synchronous singing) increases cooperation, especially when there is a shared goal amongst participants (Reddish, Fischer, & Bulbulia, 2013), as well as self-reported feelings of connection to group members, and increased trust of group members (Cohen, Ejsmond-Frey, Knight, & Dunbar, 2010; Fischer, et al., 2013; Wiltermuth & Heath, 2009). Future research is needed to shed light on the kinds of rituals that are most likely to foster group cohesion.

**FUTURE DIRECTIONS**

There are many outstanding questions about the psychological and behavioral effects of social rituals. For example, what is the connection between collective rituals as mechanisms for social cohesion and individual ritualized behavior as a means of anxiety reduction? Group rituals often concern addressing, averting, and mitigating danger. Addressing perceived threat is also a common theme in many individual ritualized behaviors. Perceived threats are thought to activate mental “security systems,” such as the “hazard precaution system” (Boyer & Liénard, 2006). The activation of mental security systems results in security-related behavior, of which ritual may be a part. In general, implied threats to fitness (e.g., strangers, social exclusion, contamination) have been found to result in stronger adherence to in-group normative ideologies (Navarrete & Fessler, 2005). It is possible that shared beliefs and practices strengthen group bonds and increase affiliation with group members in times of stress.

Stress is a common theme in many group rituals. Whereas many rituals involve euphoric elements (e.g., collective singing and dancing), the ethnographic record is full of examples of dysphoric, “rites of terror” (e.g., painful initiation rites). Thus, another interesting question for
future research is how diverse forms of ritual behavior contribute to social cohesion. Anthropological research suggests that both euphoric and dysphoric rituals increase social cohesion (Whitehouse & Lanman, 2014). It is unknown, however, if they do so by the same mechanisms. Future research should aim to disambiguate the mechanisms by which different kinds of rituals contribute to group cohesion.

Until recently, the functions of ritual have primarily been studied using adult participants. Much less work has examined the development of ritual participation and group functioning. Whereas much of human cognition and behavior is evolutionarily prepared, our prolonged childhoods provide us with a unique window in which to learn the complex beliefs, norms, and practices of our cultural communities. Understanding how children learn rituals will provide novel insight into the ontogeny of social group cognition and behavior. Recent work has found that young children are sensitive to cues to social conventions, such as rituals, and imitate ritual actions with higher fidelity than instrumental behavior (Legare, et al., 2015). Other research has found that engaging in collective rituals increases preferences for in-group members (Wen, Herrmann, & Legare, 2015) and that the motivation to affiliate with social groups may underlie children’s imitation of ritual actions (Watson-Jones, et al., 2014; Watson-Jones, Whitehouse, & Legare, in press). There are still many open questions for future research examining the ontogeny of the functions of ritual, such as how engaging in rituals may impact children’s prosociality toward in- versus out-group members and how children might use imitation of ritual actions as signals of group membership.

CONCLUSION
One of the greatest challenges of social group living is the problem of coordinated and cooperative group action (Cosmides & Tooby, 2013). We propose that rituals serve four core functions that address the adaptive problems of group living: they (a) provide reliable markers of group membership, (b) demonstrate commitment to the group, (c) facilitate cooperation with social coalitions, and (d) increase social group cohesion. In sum, we propose that the capacity to engage in ritual is a psychologically prepared, culturally inherited behavior geared towards facilitating social group dynamics. Future research at the intersection of anthropology and cognitive science is required to examine the mechanisms by which ritual activity contributes to cooperation and cohesion amongst group members. Taking a cognitive perspective on the evolution and ontogeny of ritual will increasingly contribute to our understanding of *homo ritualis*. 
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Recommended readings

This paper provides readers with an in-depth discussion of ritual as Credibility Enhancing Displays (CREDs).

A cognitive psychological account of reasoning about ritual efficacy.

A theory of the connection between individualized ritual behavior and collective, group rituals.

An overview of the costly-signaling account of religious rituals.

A comprehensive overview about the relationship between rituals and group cohesion.