

## 10 Ritual, Cognition, and Evolution

Harvey Whitehouse

### 10.1 Introduction

Social scientists have long recognized ritual to be a universal and ancient feature of human societies that influences the scale, structure, and cohesiveness of cultural groups as well as the various forms of competition (including violent conflict) that divide them (Ibn Khaldūn, 1958; Robertson Smith, 1889/2002; Frazer, 1922; Durkheim, 1912/2008; Weber, 1947). Recent convergences and developments in cognitive science and evolutionary theory point to new directions for interdisciplinary research on this topic. Such approaches focus attention on developmental and proximate causes (Tomasello, 1999; Boyer & Lienard, 2006); social consequences and functions (e.g., Atkinson & Whitehouse, 2010; Cohen, Montoya, & Insko, 2006); and processes of natural and cultural selection within the constraints of phylogeny or history (e.g., Wilson, 2002; Turchin, 2006).

Rituals are commonly credited with all kinds of functions: supernatural, symbolic, expressive, social, and so on. But how they serve these functions is opaque, inasmuch as the causal link between socially stipulated procedures and their putative end goals (if any) is opaque. *Teleological opacity* of this kind is one of the hallmark features of ritualized behavior. Social anthropologists have often observed that ritual participants are powerless to explain why they carry out their distinctive procedures and ceremonies, appealing only to tradition or to ancestors. But of considerable interest, too, is the fact that nobody has any difficulty understanding the anthropologist's question, when she asks what the rituals mean. People know that ritualized actions can be invested with functional and symbolic properties even though they may struggle on occasion to identify what those may be, often pointing the hapless researcher in the direction of somebody older or wiser. On other occasions, people have very strong intuitions about the meaning of a ritual, for instance the communicative function of

a military salute, even though they are powerless to explain why that particular gesture rather than any other is the privileged method of expressing respect in the military. What distinguishes rituals from other kinds of teleologically opaque behavior is that the relationship between actions and stated goals (if indeed they are stated at all) cannot *even in principle* be specified in physical-causal terms (Whitehouse, 2004, 2011; Legare & Whitehouse, under review; Sørensen, 2007). To seek out a practical rationale is to misunderstand the very nature of ritualized behavior.

Much of the cultural knowledge we acquire in the course of socialization may be described as ritualized. Religious dogmas, embodied skills, social etiquette, clothing fashions, and even the rules of childhood games *may* be ascribed functions or purposes (whether in the process of teaching and learning, or in reflecting later on why our habits take the form that they do). Often these functions remain mysterious, however—behavioral norms copied simply without question. But whether or not we invest a ritual with a particular function or meaning, we do not consider it sensible to formulate in physical-causal terms how that function is realized. This is the crux of the difference between rituals and purely practical actions.

Imagine the various ways in which swords can be used for practical ends. The long, sharp pointed blade is admirably designed for piercing and slashing, whether for the purposes of maiming and slaying foes on the battlefield or for a range of more prosaic tasks. These natural properties of sharp materials have been known to our ancestors stretching far back into the mists of prehistory. They are endlessly rediscovered by each new generation of children as a consequence both of our teleological reasoning capacities and our rapacious exploration of object affordances in the environment from early infancy onwards, often under the guidance of more experienced individuals. But sharp objects can also be used in ways that it would be absurd to interpret in teleological terms. For instance, a sword may be used to confer a knighthood by tapping the flat edge of the blade on the candidate's shoulders. To make sense of this behavior, we must adopt a ritual stance rather than an instrumental one—we must abandon all hope of understanding what is happening in physical-causal terms and instead assume that whatever-it-is that requires us to observe this particular sequence of actions in this particular way derives from an altogether different way of reasoning. Quite what that reasoning should be is seldom entirely clear: perhaps the actions of a ritual should be regarded as symbolic, perhaps as divinely sanctioned for reasons inscrutable to mere mortals, perhaps as the result of some unknowable mechanisms of supernatural causation, or perhaps for the sole reason that this is the proper or

traditional way to behave. But whatever the consensus on such issues, nobody would think that the ritual is explainable in mechanistic terms. To interpret it that way would be to assert that this is not really a ritual at all.

This chapter is part of the treatment of religion in the current volume. Most *ritual* traditions, ancient and modern, postulate beliefs in one or more gods, and largely for this reason are commonly referred to as religions. Nevertheless, the "religion" label is slippery and is also used to refer to cultural traditions that entail beliefs in ancestors (the spirits of dead people), creator beings (not necessarily gods in the senses most commonly used), or various kinds of magic (whether or not requiring the intervention of supernatural agents). While there is nothing wrong with referring to ritual traditions that espouse such beliefs as religions, we cannot assume that the category "religion" has underlying coherence. In fact, it may comprise an arbitrary collection of ideas (e.g., about gods, ghosts, creation, magic, etc.) that have quite distinct and unrelated causes. Some ritual traditions (e.g., Maoism) eschew concepts commonly classed as religious. Still, secular rituals are a relatively recent cultural innovation, and even today remain the exception rather than the rule. It is possible that certain aspects of the psychology underlying ritualized behavior tend to prompt "religious" ideas, and may even provide some coherence to the category after all. This chapter considers that possibility in its concluding discussion.

## 10.2 Why Humans Have Rituals

Many species besides humans exhibit stereotypic behaviors that it is tempting to describe as rituals. Well-known avian examples include the exquisite choreography of mating swans and the ornate temple-like structures of the tropical bowerbird. Complex forms of courtship in birds have adaptive functions, acting for instance as hard-to-fake signals of fitness. Ritual-like behavior in animals may also contribute to the building of social networks or the inhibition of aggression within groups. Do human rituals serve similar functions?

From a gene's eye perspective, men and women should have very different mating strategies. Males should be opportunistic, females cautious and picky. It has been argued that much of the cultural achievements of men (in art, science, politics, and so on) serve the same biological function as the peacock's tail (Wight, 2007). They are hard-to-fake signals of an individual's genetic endowments. Does the same apply to human rituals? In many traditional religions, ritual is the exclusive province of men, with

women commonly forming an audience. It is tempting to draw an analogy with the behavior of the bowerbird, designed to attract critical and discerning females. Avian displays have other functions than to attract mates, for instance to strengthen bonds between an established pair, thereby assisting cooperation in the rearing of offspring. Penguins and albatrosses (among many other species) pair bond through synchronous head-bobbing. Human rituals also commonly involve synchronous movement. Recent experiments suggest that this increases social attachment and cooperation (Wiltermuth & Heath, 2009), much as it appears to do in certain birds.

It is also possible that the human propensity for ritualized behavior emerged partly in response to more species-specific problems. With the move from jungle to savannah, our ancestors became increasingly omnivorous in their food-procurement strategies. Among the advantages of being a generalist would have been reduced vulnerability to food shortages resulting from climate change, disease, or competition from other species. Openness to trying out new potential foodstuffs, however, would have carried a greatly increased risk of imbibing toxins (Rozin, 1999). It has recently been argued that humans evolved a unique method of reducing such risks: the *hazard precaution system* (Boyer & Lienard, 2006). According to the theory, dubious objects and substances trigger a program of stereotyped actions involving cleaning and separating and a concern with symmetry, exactness, or boundary marking. This mechanism, it is suggested, evolved to protect us from contaminants by impelling us to take precautionary action when a risk is suspected. The neural systems responsible for producing hazard-precaution routines would seem to tragically malfunction in patients suffering from obsessive-compulsive disorder, but are quite useful when operating normally. According to Boyer and Lienard, a bizarre byproduct of the hazard-precaution system is that humans readily pick up behaviors, however random and unnecessary, which resemble the system's stereotyped outputs, primarily cultural rituals.

The byproduct theory of why humans have rituals has some appealing features. Indeed, it is quite possible that even the peacock's tail or the synchrony-cohesion arguments best explain cultural rituals as byproducts of mechanisms whose original adaptive functions have been lost or diminished. After all, performing rituals together may help us to attract a mate, but being an especially good performer in the church choir is only one of many potential clinchers in mate selection, and probably not a privileged one. We participate in rituals for many other reasons that have no adaptive benefits at the individual level, and may even carry significant costs. Likewise, the feel-good factor resulting from singing, dancing, and performing

other synchronous actions in groups may promote bonhomie and help to motivate participation, but no more so than sharing a good joke or piece of juicy gossip. In sum, cognitive evolution can take us only part of the way to explaining the prevalence and diversity of rituals in our species.

To appreciate the prominence and heterogeneity of ritual in human societies, we must consider the adaptive benefits of rituals for social groups. The teleological opacity of ritual produces a potentially infinite universe of behavioral diversity. Human populations living side by side may have much in common, adopting the same basic techniques of production, using similar tools, exploiting similar natural resources and foodstuffs, living in similar kinds of houses, and so on. Indeed, at the level of practical affairs and day-to-day life, there may be little to tell them apart. People cannot distinguish themselves from their neighbors by continually inventing new ways of tackling the technical challenges of life. Useful inventions typically appear slowly, and their spread is difficult to control. But the arbitrariness of ritualized behavior makes it extraordinarily easy for a group to differentiate itself from others. For this potential to be realized, however, we need to understand another consequence of communal rituals: in-group bonding.

Social scientists have long argued that rituals bind groups together. Recently, anthropologists and psychologists have assembled systematic evidence that ritual participation increases trust and cooperation among participants, by acting as a costly and therefore hard-to-fake signal of commitment to the group. An important part of the story, however, concerns the relationship between ritual meaning and social identity. Rituals can be invested with a great variety of potential meanings, emotions, moods, and associations (Geertz, 1973). The fact that the ritual actions are not transparently linked to any particular causal structure and function allows for many possible interpretations. Insofar as people reflect on exegetical matters (and, as noted above, this is not always the case) the resulting meanings may be quite idiosyncratic. But if interpreters do not know very much about what others are privately thinking, they can easily form the impression, however illusory, that what is personally meaningful and motivating about the ritual experience, for them, is shared by all other participants. This point too has long been recognized by social scientists, who argue that the common experience of publicly observable aspects of ritual (such as the actions and props) fosters the illusion of collective emotion and interpretation (Kertzer, 1988).

Rituals serve as admirable markers of group boundaries and also as mechanisms for increasing internal cohesion and shared identity within

communities. But different forms of communal ritual can exploit these affordances in quite strikingly different ways and to varying degrees, as described in the following section.

### 10.3 Ritual, Group Formation, and Competition: The Imagistic Mode

Group formation is one of the most adaptive and yet also perhaps the most devastating of all human traits. Without groups, we could not wage wars, commit genocides, or colonize other people's lands. There is much to admire about human groupishness, insofar as it gives rise to acts of altruism, loyalty, camaraderie, heroism, and love. But these qualities typically extend only to the group (e.g., the family, tribe, or nation). Beyond the group, caution and suspicion reign, and when provoked by the members of rival coalitions we have a seemingly insatiable appetite for organized violence. Social cohesion whets the appetite for such conflict. As a simple rule of thumb, the more intensely we love our fellows, the more systematically and brutally we slay our foes.

Rituals play a crucial role in inter-group conflict and competition. This section begins with one of the most ancient ways in which rituals have been used to promote in-group cohesion and out-group hostility, namely through the performance of rare but highly traumatic rites that have enduring psychological effects on those who experience them. This syndrome has become known as the *imagistic mode of religiosity* (Whitehouse, 1995, 2000, 2004; Pachis & Martin, 2009). Imagistic rituals take many diverse forms, sometimes involving induction into the group (or *initiation*). They are found in all the world's most bellicose tribes and also in modern armies. There is evidence that they were performed at least as long ago as the Upper Paleolithic, and it is quite possible they date back much earlier still, helping to explain not only the success of human groups at war with each other but also why the spread of modern humans into new territories was so often accompanied by the extermination of rival species, from the large animals of Australasia and New Guinea to the Neanderthals of Europe.

It has long been appreciated that rare, traumatic rituals promote intense social cohesion, but efforts to tease apart the psychological mechanisms involved only really took off in the 1950s, much of the work inspired by Festinger's theory of *cognitive dissonance* (1957). Rituals *incur costs* (e.g., time, labor, and psychological endurance), often with the promise of only poorly defined or indeterminate rewards, and in some cases for no explicit purpose at all. In the case of initiations, the costs are typically extreme, for instance involving physical or psychological tortures, often of a terrifying

kind. In a now classic application of Festinger's theory, Aronson and Mills (1959) demonstrated that the more severe the requirement for entry into an artificially created group, the greater would be the participants' liking for other group members. Their explanation for this was that our feelings toward the groups we join will never be wholly positive, and the experience of *disliking* aspects of the group will be *dissonant* with the experience of having paid a price to join; this dissonance could be resolved by downplaying the costs of entry, but the greater the severity of initiations into the group, the less sustainable that strategy will become. Under these circumstances, dissonance reduction will focus instead on generating more positive evaluations of the group.

More recent studies using psychological experiments, economic games, and cross-cultural surveys have shown repeatedly that within-group liking and out-group hostility are directly correlated (Cohen et al., 2006). As one game theorist neatly put it: "When Joshua killed twelve thousand heathen in a day and gave thanks to the Lord afterwards by carving the Ten Commandments in stone, including the phrase 'Thou shalt not kill,' he was not being hypocritical" (Ridley, 1996, p. 192).

For over two decades, our understanding of imagistic dynamics was based largely on a relatively small sample of detailed case studies (Whitehouse & Laidlaw, 2004; Whitehouse & Martin, 2004). But more systematic data on this topic are now being assembled. In a recent survey of 644 rituals selected from a sample of 74 cultures, Atkinson and Whitehouse found an inverse correlation between ritual frequency and levels of dysphoric arousal, with most rituals clustering around the two poles of the continuum (Atkinson & Whitehouse, 2010). In this survey, most low-frequency rituals involving intense dysphoric arousal were not used to mark entry into a group. They served a diversity of overt goals, such as communion with gods and spirits, honoring the dead, veneration of icons, the promotion of crop fertility, and so on. Moreover, extensive analysis of case studies has revealed considerable variability in the rationale assigned to them by participants (Whitehouse & Laidlaw, 2004; Whitehouse & Martin, 2004) and in some cases no rationale at all was provided (Barth, 1987; Humphrey & Laidlaw, 1994).

"Rites of terror" (Whitehouse, 1996) increase cohesion and tolerance *within groups*, but they also intensify feelings of hostility and intolerance *toward out-groups*. Cognitive dissonance does not appear to be the whole explanation. Two other factors also have crucial consequences for in-group cohesion and out-group hostility. One is *memory*: one-off traumatic experiences, especially ones that are surprising and consequential for

participants, are remembered over longer time periods (and with greater vividness and accuracy) than less arousing events. Such memories have a canonical structure, sometimes referred to as "flashbulb memory" (Conway, 1995), specifying not only details of the event itself but what happened afterwards and who else was present. This last point is especially important in establishing the exclusivity of ritual communities: there is little scope for adding to or subtracting from ritual groups whose membership derives from uniquely encoded, one-off experiences.

The other factor is *interpretive creativity*. Since the procedures entailed in rituals are a matter of stipulation, and are not transparently related to overall goals (if indeed those goals are articulated at all), the meanings of the acts present something of a puzzle for participants. In the case of traumatic ritual experiences that are recalled for many months and years after the actual event, questions of symbolism and purpose are typically a major focus of attention. In a series of experiments using artificial rituals and varying levels of arousal, Richert, Whitehouse, and Stewart have shown that, after a time delay, the volume and specificity of spontaneous reflection on the meanings of rituals is substantially greater in high-arousal conditions than in controls (2005).

Similar effects have been found using field studies by systematically comparing the interpretive richness of people's accounts of rituals involving variable levels of arousal (Whitehouse, 1995; Xygalatas, 2007). Since rites of terror are typically also shrouded in secrecy and taboo, participants have little opportunity to compare the contents of their personal ruminations. As a result, they form the impression that their rich interpretations are shared by others undergoing the same experience, increasing the sense of camaraderie.

This heady cocktail of psychological mechanisms (cognitive dissonance, shared memory, and the illusion of common revelation) binds together small, exclusive communities of ritual participants. Groups formed in this way display high levels of trust, cooperation, and tolerance for fellow members. But there is also a darker side to this syndrome, which finds expression in out-group hostility. Comparative research, both ethnographic and historical, has revealed a strong correlation between rites of terror and chronic inter-group conflict and warfare (Cohen et al., 2006). Exactly why ritually induced cohesion produces intolerance toward out-groups requires further research.

Understanding small-group cohesion and out-group hostility within an evolutionary framework requires close attention not only to the proximate causes of the trait (in this case the psychological processes involved in rites



of terror), but also the ultimate causes, namely *why* a given ritual syndrome spreads and persists over time. Cultural evolution is governed by many of the same fundamental principles as biological evolution, except that inheritance is by learning (rather than by genes); selection by consequences for cultural traits tends to be rapid; adaptive cultural mutations arise frequently (often as a result of deliberate innovation); and prior cultural forms are only loosely constraining (cultural revolutions do sometimes happen). Nevertheless, the study of how ritual variability affects the survival of cultural groups can be understood in the same basic terms that any evolutionary biologist would recognize. Specifically, we need to understand how changing features of a given group's ecology and resourcing needs might make the adoption of particular ritual forms *adaptive* (by contributing to group survival and reproduction over time), allowing also for the possibility of drift (random factors contributing to the ritual's persistence), and phylogeny (the constraints imposed by pre-existing ritual traditions).

Rites of terror (Whitehouse, 1996) and the intense cohesion these produce in small groups are typically an adaptation to conditions of tribal warfare (although also serving as a commitment mechanism for other dangerous pursuits, such as the hunting of large game). Activities involving high risk and temptation to defect (e.g., raiding, head-hunting, bride-capture, sectarian violence, and gangland disputes) would seem to be linked to the presence of low-frequency, dysphoric rituals (typically involving severe physical and psychological tortures). These patterns seem to have emerged and spread not only in simple societies (for instance, in sub-Saharan Africa, native America, Highland Philippines, Melanesia, Amazonia, etc.), but also play a prominent role in the formation of military cells in modern armies, terrorist organizations, and rebel groups (Whitehouse & McQuinn, in press). On this view, the imagistic mode is a kind of "gadget" for binding together military coalitions: in conditions of chronic warfare, groups lacking this gadget rapidly disappear and those possessing it systematically destroy, absorb, or become allied with their neighbors.

#### 10.4 Ritual, Group Formation, and Competition: The Doctrinal Mode

Until just a few thousand years ago, group rituals were typically occasions for high excitement, but nowhere had people learned to regularize their rituals around daily or weekly cycles. High-frequency ritual (or *routinization*) is a hallmark of world religions and their offshoots, but is also

characteristic of a great many regional religions and ideological movements. Routinized rituals play a major role in the formation of large-scale identities, enabling strangers to recognize each other as members of a common in-group, facilitating trust and cooperation on a scale that would otherwise be impossible. This syndrome has come to be known as the *doctrinal mode of religiosity* (Whitehouse, 1995, 2000, 2004). It heralds not only the first large-scale societies, but also the first complex political systems in which roles and offices are understood to be detachable from the persons who occupy them. To understand the proximate causes of these patterns, we need to return to the issue of how rituals are remembered.

When people participate in the same rituals on a daily or weekly basis, it is impossible for them to recall the details of every occasion. Instead they represent the rituals and their meanings as *types* of behavior—a Holy Communion or a call to prayer, for instance. Psychologists describe these representations as procedural scripts and semantic schemas. Scripts and schemas specify what typically happens in a given ritual and what is generally thought to be its significance. In a group whose identity markers are composed mainly of scripts and schemas, what it means to be a member of the tradition is generalized beyond people of our acquaintance, applying to everyone who performs similar acts and holds similar beliefs. This route to the construction of communal identity, based on routinization, is a necessary condition for the emergence of *imagined communities* (Anderson, 1983)—large populations sharing a common tradition and capable of behaving as a coalition in interactions with non-members, despite the fact that no individual in the community could possibly know all the others, or even hope to meet all of them in the course of a lifetime.

Routinization has other important effects as well. For instance, it allows very complex networks of doctrines and narratives to be learned and stored in collective memory, making it relatively easy to spot unauthorized innovations. Moreover, routinization artificially suppresses reflection, in effect producing more slavish conformism to group norms. In one experiment, for instance, a group of thirty students performed an unfamiliar ritual twice a week for ten weeks and were then asked to post comments on the meanings of the ritual after each performance; reflexivity dramatically declined once the ritual had become a familiar routine (Whitehouse, 2004). Part of the reason seems to be that, having achieved procedural fluency, one no longer needs to reflect on *how* to perform the ritual, and this in turn makes one less likely to reflect on *why* one should perform it. Thus routinization would seem to aid the transmission of doctrinal orthodoxies, which are

traditions of belief and practice that are relatively *immune to innovation* and in which unintended deviation from the norm is *readily detectable*.

Putting these things together, it would seem that routinized rituals provide a foundation for much larger-scale communities, capable of encompassing indefinitely many individuals singing from the same hymn sheet (both literally and metaphorically). Expanding the size of the in-group in this way has implications for the scale on which people can engage in cooperative behavior, extending both *trust* and *tolerance* even to strangers simply because they carry the insignia that display shared beliefs and practices. At the same time, however, the cohesion engendered through common membership in the tradition is less intensely felt than that accomplished in small groups undergoing rare and painful rituals together. In other words, as cohesion is expanded to encompass greater populations, it is also, in an important sense, spread more thinly. Some routinized traditions, however, manage to get the best of both worlds: a mainstream tradition, constructed around regular worship under the surveillance of an ecclesiastical hierarchy, may tolerate much more colorful local practices involving rare, dysphoric rituals (such as self-flagellation at Easter parades in the Philippines or walking on red hot coals among the Anastenaria of Northern Greece). While these localized practices undoubtedly produce highly solidary groups distinct from the mainstream tradition, the resulting cohesion can be projected onto the larger community, rejuvenating commitment to its unremitting regime of repetitive rituals (Whitehouse, 1995). Other patterns are also possible, however. One grand theorist of Muslim society, Ernest Gellner, showed that rural tribes bound together by high-arousal rituals formed the most formidable small military units in Islam, capable of periodically toppling urban elites, whose more routinized rituals and doctrinal beliefs failed to generate the kind of cohesion needed to mount an effective defense (Gellner, 1969). Other major patterns include periodic splintering and reformation (Pyysiäinen, 2004).

Although much work on these topics has been concerned with understanding the effects of psychological affordances, biases, and constraints, efforts are now being made to model the ultimate causes of patterns of religious group formation over time (Whitehouse, Bryson, Hochberg, & Kahn, in press). What factors favor the appearance and persistence of routinized rituals and the large-scale communities they engender? Some recent efforts to answer this question have focused on the first appearance of routinized collective rituals in human prehistory (Mithen, 2004; Johnson, 2004; Whitehouse & Hodder, 2010).

A watershed in the evolution of modes of religiosity seems to have occurred around 8,000 years ago at Çatalhöyük, in what is now Central Anatolia in Turkey. In the early layers of Çatalhöyük, the imagistic mode prevailed. There we find much evidence of low-frequency, high-arousal rituals, detectable from animal bones resulting from hunting and feasting activities, pictorial representations of major rituals, and human remains manipulated in elaborate mortuary practices. These practices would have produced highly cohesive groups necessary for coordinated hunting of large, dangerous animals. The boundedness of these groups may still be visible today in the massive trenches that appear to have divided communities in the earlier phases of settlement. But as hunting gradually gave way to farming, the need for such groups disappeared, and instead more day-to-day forms of cooperation across the settlement were required to sustain novel forms of specialized labor, reciprocity, pooling, and storage. Sustainable exploitation of the commons now required the dissolution of small-group boundaries and inter-group rivalry in favor of larger-scale forms of collective identity, trust, and cooperation extending to tens of thousands of individuals at the enlarged settlement.

This change in the scale of political association was facilitated by the appearance of the first-ever regular collective rituals, focused around daily production and consumption, and the spread of identity markers across the entire settlement, for instance in the form of stamp seals used for body decoration and more standardized pottery designs. The appearance and spread of routinized rituals seems to have been linked to the need for greater trust and cooperation when interacting with relative strangers. Consider the difficulties of persuading people you scarcely know that they should make long-term investments in your services based on a promise, or should pay taxes or tribute in return for protection or sustenance in times of need. In the absence of more detailed information about trustworthiness of prospective trading partners or remote governors to fulfill their part of any bargain, shared insignia proclaiming commitment to common beliefs and practices becomes a persuasive form of evidence. In such conditions, groups with routinized rituals capable of uniting large populations will tend to out-compete those who lack shared identity markers of this kind.

With the appearance of the first large-scale complex societies unified by routinized rituals, the dissociation between office and office-holder became more salient. In groups whose beliefs and practices are specified by generic scripts and schemas, we no longer represent our fellow members primarily as particular persons, but as incumbents of more generic qualities and roles

(worshippers, imams, gurus, choir boys, etc.). The advent of routinized rituals heralds a fundamental shift from particularistic social relations to more universalistic conceptions of the social world, in which offices are understood as transcending the office holders, outliving them and regulating their behavior (Durkheim, 1912/2008). A natural corollary is that achieved status and power gives way to ascribed attributes that can be inherited. Principles of rank and royalty begin to override more personal qualities such as aggressivity or eloquence.

### 10.5 Modes of Ritual Domination and Cohesion

The shift from imagistic to doctrinal dynamics implies a change of strategy in the means of coercion. Anthropologists have distinguished two broadly contrasting modes of domination in political life (Sahlins, 1963; Bloch, 2008). First, there is the *transactional* strategy of persuasion and threat, the equivalent of "fighting and biting" among our non-human primate cousins. Individuals can garner resources through acquisitive strategies, for instance, based on the use of force (e.g., the exercise of superior individual physical strength and courage, or the command of a well-equipped militia); exceptional prosociality (e.g., acts of magnanimous generosity, or the espousal of doctrines seemingly contrary to the individual's self interest); the arts of diplomacy (e.g., protection of the group against perceived external threats using effective techniques of negotiation); or the manipulation of supernatural forces (e.g., holding sway with the gods or ancestors). All these methods of garnering power, status, and wealth are the outcomes of individual effort and are similar to (though arguably never identical to) the strategies of upward mobility found among other intelligent social animals, at least insofar as individual achievements cannot be passed on when the privileged individuals lose their grip or die. Thereupon, another achiever must succeed to the position of dominance.

Secondly, there is the *transcendental* route to leadership: the establishment of offices of an enduring kind, whose occupants are ascribed positions of superiority. Emperors, kings, chiefs, and popes (for instance) are, once installed, seen as inherently better than the rest of us by virtue of the offices they hold. Like any self-styled leader, such office-holders normally have reciprocal obligations to the subject population, but since their dominance is based on the rights of office rather than earned obligations, they can demand more than they replenish. Moreover, unlike the achiever, office-holders can pass on their dominions to successors (either by broadly democratic means or by principles of inheritance). Humans are unique

among other animals in this respect. Inequalities in human societies are accomplished through a mixture of the transactional and the transcendental, but in widely varying degrees. For instance, New Guinea "big-men" are largely self-made and unable to pass on their networks to sons and nephews (Godelier, 1986; Whitehouse, 1991), whereas the inherited spiritual qualities (*mana*) of Polynesian chiefs enabled them to extract tribute by virtue of office and transmit their power, status, and wealth to succeeding generations, over time building ever larger empires (Feinberg & Watson-Gegeo, 1996). Yet even chiefly figures must be effective achievers if they are to consolidate or expand the jurisdiction of their authority. And some Melanesian big-men have succeeded in recruiting their sons to positions of influence. So we are dealing with differences of degree rather than kind in the emergence and reproduction of inequalities. But what drives the shift from achieved to ascribed forms of leadership is a stepping-up of the pace of ritual life and a reconceptualization of social relations in more abstract and formal terms.

The shift from transactional to transcendental modes of domination is accompanied by changes in social cohesion. Psychological studies suggest that when people think they share the same thoughts and emotions, they like each other more (Byrne, 1971). Arguably the most powerful glue that binds us to our fellows is the impression (sometimes only the illusion) of shared mental content, prompting not only greater liking for those who are like us, but greater confidence in their reliability. A possible evolutionary explanation for this finding is that shared mental content acts as a proxy for genetic relatedness; in other words, that we have an evolved propensity to treat people who share our memories, feelings, norms, values, etc. as *kin* (cf. Roscoe, 1993).

We identify shared mental content as a consequence of gathering information about each other via two broadly distinct channels: testimony and personal experience. Whereas our explicit beliefs about the qualities of people and places (including the dangers they pose) rely heavily on testimony, we tend to accord greater weight to experience (and the inferences derived from it). Actions, so the saying goes, speak louder than words. For instance, while we might base much of what we know about a partner on her self-presentation and the testimony of others, leading to a well-formed portrait at an early stage of the relationship, our confidence in the accuracy of our portrait only gathers momentum over many experiences of the partner's behavior over time (and our interpretations of that behavior, which presumably may be quite heavily colored by our more testimony-based beliefs about her).

Prior to the emergence of the doctrinal mode in human prehistory, group identity was forged entirely on the basis of directly shared experiences—including participation in rituals—that enriched our internally generated representations about co-participants and evinced high levels of confidence in their trustworthiness. Any set of memorable shared experiences could produce this effect, but the more representations a set of shared experiences can elicit over time (as a result of observation and private reflection rather than verbal testimony), the more confidence we have in the trustworthiness of co-participants and the more rigidly we adhere to the group's values and beliefs. The imagistic mode has long proven to be exceptionally effective at producing the illusion of shared mental content based on common experience. With the appearance of more routinized rituals, however, a new kind of group identity became possible based on semantic schemas and procedural scripts that could be generalized to any member of the in-group, even to complete strangers. Simply wearing a certain mode of dress or hairstyle now revealed a lot about a person's beliefs and practices. We could then make inferences on this basis about their trustworthiness, even people we had never met before. But just as this kind of cohesion could spread more widely, it was inevitably spread more thinly. Group identity cast in this generic mold, like testimony pertaining to people's personal character and history, may activate our evolved kin-detection heuristics, but only weakly, because it is not based on direct experience of the person in question.

## 10.6 General Discussion

Ritualized behavior is rooted in our evolved psychology, closely linked to our natural propensity to imitate trusted others. Understanding the nature, origins, and developmental pathways of this propensity is primarily a task for experimental psychology. Rituals also have some striking affordances for group-building, the variable exploitation of which is most productively understood within the framework of sociocultural evolution. Collective rituals come in two broad varieties: low-frequency/high-arousal (associated with the imagistic mode of group formation) and high-frequency/low-arousal (associated with the doctrinal mode). A large body of research has been conducted into the proximate causes of imagistic and doctrinal dynamics, including the accumulation of case studies, new field research, large-scale ethnographic surveys, and psychological experiments. Studies of ultimate causation have so far been devoted to the development of theoretical models, especially agent-based computational simulations, and

to empirical studies focusing especially on the archeology of the Neolithic Middle East and the history of Europe and the Mediterranean.

More systematic research is needed into the role of ritual in the formation and regulation of human societies. There is much yet to discover about how people learn the rituals of their communities and how rituals promote social cohesion within the group and distrust of groups with different ritual traditions. Qualitative field research and controlled psychological experiments are needed in a wide range of societies to explore the effects of ritual participation on in-group cohesion and out-group hostility. Longitudinal databases would be particularly useful if we are to explore the evolution of ritual, resource extraction patterns, and group structure and scale over significant time periods. Further research is also needed to establish more clearly the relationship between ritual and religion, the topic with which this chapter concludes.

Many of the rituals recorded by anthropologists and historians are carried out with the ostensible purpose of maintaining relationships with gods, ancestors, and creator beings. Moreover, there appears to be a link between ritual action and magical thinking more generally. This raises the question whether rituals might serve in some way to bind together the disparate concepts that are commonly referred to as "religion." Even if the psychology required to build concepts of gods is quite different from that needed to conceive of an afterlife or a creator or a magical spell, nevertheless there might be some feature (or cluster of features) associated with ritualized action that tends to trigger all those features we commonly describe as religious, so lending the category some kind of coherence.

Perhaps rituals prompt us to think about magical causation and supernatural agency as a consequence of their causal opacity. The fact that we cannot specify any physical-causal link between ritual actions and hoped-for outcomes encourages us to postulate a supernatural link, whether quasi-mechanistic or agent-driven. There is some evidence that rituals proliferate around activities with uncertain outcomes. Athletes, for instance, are prone to performing rituals spontaneously when the risks of failure are most acute and the longing for success most intensely felt (Sørensen, 2007). Often these rituals take the form of appeals to supernatural agents, however vaguely specified. Ethnographers have long noted that rituals tend to accompany risky endeavors, but less so in pursuits entailing more predictable outcomes (Malinowski, 1935/2001, 1945/1992). But little is known about the psychological mechanisms linking teleological opacity with appeals to supernatural forces or agents.



Traditional rituals may also prompt us to think about dead ancestors and questions of origin and creation because of the prescriptive character of the behavior. Where causally opaque actions are culturally prescribed or normative, our ordinary intuitions about the intentionality of actors are disrupted. Clearly, the ritualized actions cannot be comprehended as the expression of intentional states internal to the actor, but derive at least partly from the intentional states of actors who came before and stretch back into the past (Whitehouse, 2004). Thus, rituals prime reflection on the minds of the dead—the group's ancestors—leading inexorably also to questions of origin and creation.

Ritual is popularly misconstrued as an exotic, even quirky topic—a facet of human nature that, along with beliefs in supernatural agents and magical spells, is little more than a curious fossil of pre-scientific culture, doomed to eventual extinction in the wake of rational discovery and invention. Nothing could be further than the truth. Humans are as ritualistic today as they have ever been. Even the most secular political systems ever devised, for instance under the sway of historical materialism and its vision of a communist utopia, were as devoted to ritual as any in human history. Each time a child is born, a new bearer of rituals from the past is created: another member of *Homo ritualis*.

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