

Emotion, Memory and Religious Rituals: An Assessment of Two Theories

Harvey Whitehouse

Introduction

In order for rituals to be passed on from one generation to the next, the procedures they entail must be successfully remembered, and at least some participants in the tradition must be motivated to continue carrying them out. But how are these conditions satisfied? Recent research points to the presence of two modes of transmission that are caused by alternative patterns of remembering, thinking and emotional arousal. Investigation of these is currently focused around two closely related theories, which consider, respectively, the frequency with which rituals are performed (Whitehouse 1992, 1995, 2000, 2004) and the forms they take (McCauley and Lawson 2002). Both theories propose that variations in levels of emotional arousal are crucial in explaining the transmission of religious rituals. This chapter assesses some key features of the two theories and examines their scope of application.

Ritual and Emotion: What Exactly are We Talking About?

To talk about the role of emotion in the transmission of rituals presupposes a notion of what ritual is – what defines it as a distinctive phenomenon or domain. In a brilliant and path-breaking treatise on the nature of ritualization, Humphrey and Laidlaw (1994) have argued that rituals are actions that lack intrinsic intentional meaning. Whereas a non-ritual action is understood to be the expression of intentional states arising from the performing agent, rituals simply cannot be understood that way – and might in fact be attributed any of a great range of possible meanings, or no meaning at all. Ritual meaning is not intrinsic to the ritual actions themselves. This is an insight that Bloch (2004) has more recently embraced, and extended to incorporate theoretical developments in cognitive psychology, concerning the way people normally attribute intentions to agents. When

people observe an action, they naturally make assumptions about the intentions of the actor. The psychological mechanisms involved in this process are commonly referred to as 'mind-reading' or 'theory of mind' capacities.¹

Confronted with ritualized behaviours, however, these mechanisms run into difficulties (see Bloch 2004). Clearly the ritual actor is not constructing his or her movements and utterances with reference to internally generated intentional states, but rather is rehearsing stereotyped procedures that have been fixed by others in advance. The hunt for intentional meaning is therefore deflected. Are the participants to look for the intentional origins of the ritual action in the minds of previous performers? If so, how far back should they go; to their elders and ritual experts, to mythical ancestors, to messianic founders, or to whom? Much may depend on what sources of authoritative interpretation are available to the participants. Are these rituals performed as part of a tradition that provides a standard explication of its practices, or are people required to work out these unspoken meanings for themselves? If they are left to their own devices in the search for meaning, then what pressures (if any) are brought to bear on the exercise of their imaginations? Confronted with the challenges of exegetical interpretation, mind-reading mechanisms may simply give up the ghost. After all, some rituals, as any anthropologist can attest, seem to attract no exegesis at all, and the eager researcher is fobbed off with statements such as 'that's just how we do it (end of story)'.

The different ways in which people respond to problems of ritual interpretation would seem to be influenced decisively by a small number of variables, of which one of the most prominent is emotional arousal. But before we can address that issue, we first we have to sort out another can of worms: what is 'emotional arousal'?

In talking about emotional arousal, as a general human capacity, just as when discussing the role of 'theory of mind' mechanisms in ritualization, my aim is to mark off features of human thought and behaviour that can be abstracted from most of the culturally particular circumstances of their activation. This chapter is concerned with emotion in a way that might seem odd to many students of culture. For social and cultural anthropologists in particular, a primary focus of interest is the way emotions are 'culturally constructed' or 'mediated' through social interactions. Such scholars seldom ask how universal features of the human emotional system might help to explain cultural transmission, but more typically they ask how locally distinctive sociocultural dynamics might 'shape' (and might in turn be 'shaped by') distinctive emotional landscapes.² This latter strategy is entirely appropriate, of course. It is partly thanks to fine-grained ethnographic research that we now know as much as we do about variations in human emotional experience and expression, and their close connections with locally variable (and sometimes rapidly transforming) institutional conditions. We need to be able to characterize more precisely the limits of variation in emotional experience, and we should

strive to take this project further still. It is perfectly possible, for instance, that the grieving patterns of Spanish gypsies (Gay y Blasco, Chapter 9 in this volume) are adopted by other marginalized populations, with similar sociopolitical consequences, or that the emotional strategies of Sudeten Germans described by Svašek (Chapter 11 in this volume) are adopted by other populations forcibly displaced from their homelands. To develop such hypotheses persuasively, however, would require more than just inspiring metaphor and thematic association. It would require a precise rendering of the hypotheses and of the conditions under which they might be falsified. That is a challenge that might perhaps be taken up by others. My objective in this chapter is rather different.

I am not concerned here with what is locally distinctive about emotional expression and meaning. While it is clear that parts of the human emotional repertoire can be suppressed or exaggerated by locally distinctive ecology, it seems equally clear that the repertoire itself, like the limitations of the human vocal range, is much the same in humans everywhere. True, the emotional tone of certain forms of gift exchange in the New Guinea village where I conducted fieldwork were initially hard for me to grasp (see Whitehouse 1995), just as the diphthongs of Norwegian are difficult for an English speaker to master, but sentiments are forged within a biologically constrained space of emotional possibilities, just as my utterances (like those of Scandinavians) are located within the space afforded by a limited set of 'cardinal vowels'. Extreme relativism on this topic, as espoused for instance by Harré (1986), Heelas (1986) and Lutz (1988), has been systematically debunked by more rigorous scientific cross-cultural research on emotions (e.g. Ekman 1989; Brown 1991; Shaver, Wu and Schwartz 1992). But even in the absence of such fine-grained empirical work, the relativist position must blind itself to the high degree of mutual intelligibility of core emotions (such as love, anger, happiness and sadness) across cultures, and to global commonalities in the way these emotions are inscribed in people's facial expressions. Still, if the emotional repertoire is *roughly* the same for humans everywhere, then how might this impact on other aspects of human thinking and behaviour, for instance a domain like 'ritual', that are also cross-culturally recurrent? The question *complements* rather than conflicts with those being asked in other chapters of this book.

Arousal and the Frequency Hypothesis

Some human learning strategies are common to a wide range of complex animals. This has been shown particularly clearly in the study of certain aspects of memory. For instance, mammalian brains depend heavily on two methods for reinforcing inputs, so that they can be recalled in future. One of these is repetition. Humans, in common with many other animals, learn particular skills (from walking and running to finding food and recognizing enemies) through *practice*, that is by

repeating particular patterns of behaviour in response to regularized cues. This kind of rehearsal is vital to what psychologists sometimes call 'procedural learning' (following Cohen and Squire 1980) – that is, the embodied skills that eventually become second nature to us, in the sense that we can carry them out without consciously representing the knowledge we have acquired. An obvious example to be observed in many contemporary human environments would be the skill required to ride a bicycle. Much of the knowledge involved in peddling, balancing, steering and braking is activated implicitly, with little or no need for conscious control. But repetition also underpins certain forms of learning at the level of explicit (that is, statable) cognition. Humans are capable of learning large amounts of explicit information (what we might refer to as 'general knowledge') simply by being exposed to it enough times. Knowledge of this kind, often referred to by psychologists as 'semantic memory' (following Tulving 1972), can be quite easily expressed in words; we can consciously compare the terrain of separate geographical regions, for instance, or draw parallels between road maps and our aspirations for a peace process in some troubled region. But much of the information available to us in this form is not tied to a particular moment of acquisition. That is, we often cannot recall where or when we first learned a chunk of semantic knowledge, such as the shape of our country or the words of our national anthem.

The other main way of reinforcing inputs, and thus of acquiring new information, depends upon elevated emotional arousal. Again, versions of this general strategy are adopted by a wide range of complex organisms. If a novel input is associated with sufficiently heightened affective responses (whether of an unpleasant kind, like fear, or more positively charged, for instance in the case of ecstasy or joy) then we are likely to recall salient features of that input. In mammals at least, it seems appropriate to refer to such memory as 'episodic' (again, following Tulving 1972), in the sense that any future stimulus that sufficiently resembles the initial, highly emotional one, will activate various aspects of the original encoding experience (that is, activate recall of certain details of the original episode). Once bitten, twice shy. In humans, this kind of memory operates largely at an explicit level, enabling us to comment verbally on the details of things we have personally experienced in our lives. Not all such episodes available to self-report in this fashion are associated with strong emotions, but the general rule of thumb is that if an experience is novel and emotionally arousing, it will most likely be recalled episodically, perhaps for many years to come. Not surprisingly, we find that both of these mechanisms – repetition and arousal – are prominently deployed in processes of cultural transmission. A distinguished American neuroscientist, James L. McGaugh (2003), put it like this:

Scientific studies of memory, started only a little over a century ago, have amply confirmed the conclusion that practice makes perfect. We all know that rehearsal of

information or skills creates stronger memories. Much education is, of course, based on this general principle, but there is another way to make strong memories of experiences ... [which] has been long known but only recently the subject of scientific enquiry. In medieval times, before writing was used to keep historical records, other means had to be found to maintain records of important events such as the granting of land to a township, an important wedding or negotiations between powerful families. To accomplish this, a young child about seven years old was selected, instructed to observe the proceedings carefully, and then thrown into a river. In this way, it was said, the memory of the event would be impressed on the child and the record of the event maintained for the child's lifetime ... Research from many laboratories has revealed that there ... [is] a promiscuous system that enabled the lasting memory of the medieval child thrown into the river. Emotional arousal activates stress hormones that, in turn, stimulate a specific brain system that regulates the consolidation of recently acquired information to other brain regions. (McGaugh 2003: ix-x)

In the domain of ritual, repetition and arousal can both play a very prominent role. In the world's religious traditions, a general bifurcation has long been observed such that rituals tend to be either highly repetitive (high-frequency) or relatively rare but intensely emotional (high-arousal). One of the earliest attempts to build a systematic body of theory around this empirical observation is to be found in Max Weber's (1930) contrast between routinized and 'charismatic' forms of religiosity, but many other dichotomous theories have since been developed along similar lines (e.g. Benedict 1935; Goody 1968; Gellner 1969, 1986; Barth 1990).³ The main reason for the bifurcation of ritual types appears to be that repetition and arousal are a bit like oil and water, they do not mix. A substantially novel event is by definition very low in frequency and, as noted above, if the event has a strong enough emotional charge, then it is likely to persist in episodic memory. For instance, people generally remember such things as their first kiss, the day war broke out, or the first time they saw a complete solar eclipse. Those experiences have a special emotional intensity and distinctiveness. But if those experiences are repeated very frequently they are likely to *lose* these qualities. Many people enjoy kissing, but if you kiss the same person every day it is not quite the same as kissing them for the first time, or after a substantial period apart. Likewise, if your country declared war every week, or if solar eclipses were a daily occurrence, the emotional intensity of these experiences would be greatly reduced. In other words, as a general rule of thumb, *frequency varies inversely with arousal*.

Low-frequency rituals are usually very emotional events. Rites of passage furnish a particularly rich source of illustrations. For groups of novices undergoing initiation rituals the experience is likely to be highly arousing. Beatings, scarification and other forms of physical torture are common features of such rituals, and often these physical shocks are linked with various kinds of psychologically arduous ordeals. By contrast, high-frequency rituals are typically much lower in

emotional intensity. Examples of highly routinized patterns of ritual behaviour are to be found in all the world religions and most regionally dispersed traditions as well. Such rituals are often richly coloured by emotions but they seldom elicit the extremes of emotion we find in initiation rites. Rare exceptions might include routinized rituals that involve life-threatening behaviour (e.g. handling of poisonous snakes), although we have no clear evidence that arousal levels do not diminish over time among participants in such rituals. It is similarly possible that the somewhat exuberant services of many Evangelical Christian churches deliver declining levels of arousal over time (old hands experiencing lower intensities of excitement than new recruits), but this has yet to be properly tested. What does appear to be clear from the ethnographic record is that high-frequency rituals deliver relatively lower levels of arousal, in general, than low-frequency rituals (see Whitehouse and Laidlaw 2004), and many high-frequency rituals elicit such low levels of emotional stimulation that they become frankly tedious, and so may impact negatively on morale and motivation among religious adherents (see Whitehouse 2000).

These comments, however, potentially raise a clamour of questions. How do we distinguish high and low frequency or high and low levels of arousal? Even if we grant that such distinctions can be made and that the postulated bifurcation is 'out there' in the real world of religious ritual practices, then *why* is it there? What are the mechanisms that have brought it about? To say that we have two basic strategies for memory enhancement – repetition and arousal – is not sufficient to explain why rituals should be either highly routinized or emotionally exciting. After all, rituals are often quite simple clusters of procedures that could, surely, be quite easily remembered without the need of any special mnemonic tricks. Let us take these points in turn.

Distinguishing high and low frequency in relation to ritual performances raises the question, 'frequency for whom?' For a religious leader who presides over the rituals of a substantial community, participation in rites of passage may be a very frequent experience. Rites of passage are generally only low in frequency for the patients of those rituals: the novices being initiated, the bride and groom being joined in wedlock, and so on. And the mnemonic effects on the patients of some rites of passage can range from negligible (e.g. for infants undergoing a naming ceremony) to non-existent (e.g. for corpses at funerals). Consequently, not all rites of passage are low in frequency or high in arousal for all or even some participants. The point, then, is that it is not rituals *per se* that are low or high in arousal, but rather the experiences that particular categories of people have of those rituals. For certain categories of persons some specifiable types of ritual experiences are low in frequency, and the general rule of thumb is that such experiences will be accompanied by exceptionally high levels of arousal. This largely holds true, not only for the conscious patients of rites of passage, but also for participants in rituals of all types that are rarely performed in the society or religious tradition as a whole. As

Atran (2002: 158) has pointed out, it is extremely difficult to find examples of rituals that are low in frequency for a significant category of persons and yet are not also exceptionally emotional experiences for those persons.

Of course terms like 'low' and 'high' are approximate rather than precise measures. We are dealing here with relative rather than absolute levels of arousal and frequency. Very few people can recall the surface areas of Australia and England, but they know perfectly well that Australia is the larger of the two countries.⁴ Similarly, we do not need to be able to measure precisely the levels of stress experienced by novices in New Guinea initiation rites to realize that the tortures they endure are vastly more arousing than people's experiences of routinized worship in a temple, mosque or church.⁵ We could perhaps be a little more precise about what constitutes high or low frequency, however. Certainly, a ritual that is performed more frequently than once a month would qualify as relatively high in frequency, whereas a ritual that occurs no more frequently than once a year would be relatively low in frequency. The key point is that, in general, ritual cycles in any given ritual tradition tend to cluster around the relatively high-frequency and/or the relatively low-frequency ends of this spectrum. That is, most rituals occur either in cycles of less than a week or in cycles of more than eleven months. Rituals of intermediate frequency are much less common. And as frequency drops, so emotional arousal tends to rise. Annual rituals are often quite highly arousing – but rituals experienced only once in a lifetime tend to carry an extremely powerful emotional 'punch', and to have a lasting impact on our lives. These general arguments (first set out in Whitehouse 1992) have come to be known as the 'ritual frequency hypothesis'.

According to the ritual frequency hypothesis, most rituals are either relatively low in frequency and high in arousal or relatively high in frequency and low in arousal. But why? To put it more concretely, why is it that when people are initiated into the religious cults of aboriginal Australia, tribal Africa, Amazonia, Melanesia and many other traditions (including many of the esoteric cults of Europe, both ancient and modern), are they required to undergo extremely arousing (typically terrifying) experiences? Why are rarely performed rituals – the great feasts, fertility rites, millenarian vigils and so on – generally accompanied by relatively high states of emotional excitement? And, conversely, why do we find so many religious rituals around the world repeated day in and day out, or week in and week out, to the accompaniment of relatively lower levels of affective stimulation and general fanfare? In particular, why are such rituals so commonly repeated to the point of *routinization*?

It could be argued that diffusion has had a role to play in all of this. But if so it must have been a rather limited role, for we are talking about tendencies in ritual traditions distributed across all the continents over very long periods of time (see Whitehouse and Martin 2004). But whether by diffusion or independent invention

(and we may be dealing with elements of both in many cases), the bifurcation of ritual forms, in terms of frequency and arousal, has not only become established around the globe, but also become *entrenched*. This entrenchment is probably best explained in terms of processes of *selection*. Certain high-frequency/low-arousal and low-frequency/high-arousal rituals are culturally fitter than those in an intermediate position.

When I first advanced this argument (Whitehouse 1992), it seemed to me that ritual procedures were more easily remembered if they were either frequently repeated or somewhat shocking and arousing, and that this in turn made it more likely that they would be transmitted in future. I have since largely abandoned this view on the grounds that frequent rituals are far more frequent than would be necessary to ensure that people will remember the procedures, and that infrequent rituals are seldom reconstructed mainly on the basis of episodic recall (for discussions of this topic see, for instance, Barth 2002; Whitehouse 2002). It seems likely, however, that variations in frequency and arousal have decisive effects on the way ritual *meaning* is constructed and transmitted, and particularly on its motivational effects.

Recall that rituals present problems for our 'theory of mind' mechanisms. Confronted with the behaviour of any kind of agent, humans naturally (and largely at a tacit, automatic level) generate inferences about the agent's intentions, but in the case of ritual actions none of these inferences is satisfactory. Plainly, the procedures carried out by the ritual actor are not his or her inventions, but originate elsewhere. The original intentions behind the procedures, however, are hard to pin down. Why does the ritual action have to be like this, rather than that? Why must a particular sequence be followed, when plenty of other sequences would be possible? Sometimes, such questions are answered by figures of authority in the religious tradition. High-frequency ritual repetition provides optimal conditions for the transmission of official exegesis of this kind. Indeed it is only in conditions of frequent rehearsal that complex orthodoxies can be transmitted at all. In practice, we find that stable, authoritative exegesis flourishes in conditions of religious routinization, where the motivation to participate in rituals depends on techniques of verbal persuasion via specialized forms of public oratory.⁶ By contrast, intermediate or low-frequency speech-making is incapable of transmitting complex, interlocking religious teachings in a stable form. Nevertheless, low-frequency rituals that are also highly arousing can bring about other, equally impressive, effects.

Ritual experiences that are encoded as enduring and vivid episodic memories stimulate high rates of 'spontaneous exegetical reflection'. Again, we need to remind ourselves that rituals are psychologically rather peculiar actions. In the case of high-frequency rituals, 'theory of mind' mechanisms are activated but then effectively switched off as the actions themselves become habituated, and as a ready source of authoritative ritual exegesis is provided. Such conditions are conducive to

relatively low rates of spontaneous reflection of matters of ritual meaning.⁷ By contrast, low-frequency/high-arousal rituals are not subject to habituation, the conditions do not allow verbal transmission of authoritative exegesis (teachings presented at such low frequencies would be subject to massive distortion and decay), and yet the need to supply some kind of exegesis does not go away. In part, this is because one's recall for high-arousal life experiences, especially of a traumatic kind, has an intrusive and haunting quality. Even when it comes to life-changing experiences of a non-ritual kind, people frequently dwell on issues of meaning: why did this happen to me and what does it signify? Teleological reasoning, that hunts for designs in such events, no matter how apparently random, is readily activated (see Pillemer, Rinehart and White 1986). Think how much more intensive such processes become when we are dealing with ritual events: unique episodes in people's lives that we know are supposed to have meanings and designs but which remain obscure in the absence of authoritative exegesis. Ethnographic evidence suggests that these conditions are conducive to long-term rumination, and it is through these elongated processes of spontaneous reflection that the esoteric knowledge of ritual elders and experts is generated. Such religious knowledge delivers motivational effects that are at least as powerful as the kind of doctrinal knowledge acquired through processes of verbal persuasion – and may in some ways be rather more powerful, as we shall presently see.

The Ritual Form Hypothesis

In *Bringing Ritual to Mind* (2002), McCauley and Lawson set out 'the ritual form hypothesis' – a theory that explicitly builds upon what they dub the 'Whitehouse frequency hypothesis'. Like me, they argue that rituals tend to cluster around two opposing attractor positions: low-frequency/high arousal and high-frequency/low arousal. But they argue that the frequency hypothesis fails to specify the underlying *causes* of variations in performance frequency. To do that, McCauley and Lawson (2002) maintain, we need to take into account the structure or 'form' of rituals, and the roles presumed to be taken in these rituals by culturally postulated superhuman agents (hereafter referred to more economically as 'the gods').⁸

McCauley and Lawson's starting point is that rituals are *actions*, and as such they possess a distinctive structure linking agents, actions, instruments and patients into a connected whole. Imagine a waiter placing food in front of a hungry diner. Your representation of this action can be broken down into certain key elements: an agent (the waiter), an instrument or artefact (the plate of food), the action (presentation of the food) and a patient or recipient of the action (the diner). You may visualize other features of this scenario (the decor of the restaurant, the colour of the table cloth, the suit worn by the waiter, and so on), but the four elements specified above (agent, instrument, action and patient) have special impor-

tance in determining the structure of the action. A significant change to any one of these elements radically alters the nature of the action, producing new scenarios that might be either absurd (e.g. the diner presenting food to the waiter, where agent and patient roles are reversed, or the waiter presenting a plate of coal, where the instrument is substituted), or simply an altogether different kind of action (e.g. the waiter clearing the table, where the action itself is simply reversed). Religious rituals, like all other actions, involve agents, instruments, actions and patients, whose relations can be formally mapped, but here there is another factor to take into account, namely, the intervention of the gods. In religious rituals, the gods might be seen as acting through the ritual's agent, as is clearly the case in rites of ordination, in weddings and in initiations. Here, the patients of the ritual are being permanently transformed through the intervention of a deity, associated with the agent role. McCauley and Lawson (2002) refer to these as 'special agent rituals'. The gods might, however, be seen as acting through the instrument of the ritual, as for instance in a blessing where the holy water is most closely linked to the supernatural being. Or, alternatively, the gods might be associated with the patient role, as in the making of offerings and the performance of sacrificial acts. McCauley and Lawson refer to these as 'special instrument' and 'special patient' rituals respectively.

Now, according to McCauley and Lawson (2002), these differences in the way supernatural agents are implicated in religious rituals, have a series of important consequences. To simplify somewhat,⁹ we can distinguish three main kinds of consequences of ritual form, concerning repeatability, reversibility and levels of sensory pageantry. Where the involvement of the gods is most closely associated with the agent role in the form of the ritual (as in 'special agent rituals') the predictions are as follows:

1. Such a ritual should not be repeatable (it should ideally be performed once only on a given patient).
2. The effects of the ritual can be 'undone' in principle through reversing rituals (where gods might again intervene in an agentive role, for instance in rites of defrocking or divorce).
3. Levels of bodily stimulation, or what McCauley and Lawson refer to as 'sensory pageantry', will be relatively high.

By contrast, where the involvement of the gods is most closely associated with either the patient or instrument role in the form of the ritual (as in 'special patient rituals' and 'special instrument rituals') it is predicted that:

1. The rituals will be repeatable (the same actions, performed with the same agents, instruments and patients, can be carried out over and over again).

2. The rituals will be irreversible (there will be no mechanism for ritually 'undoing' the effects of previous performances).
3. Levels of sensory pageantry will be relatively low.

According to McCauley and Lawson, the above considerations drive variations in frequency that the ritual frequency hypothesis *presupposes* but (on their view) is insufficient to explain. What makes a ritual low in frequency, they argue, is the especially close association between the gods and the agent position in the ritual representation system. To put it crudely, in special agent rituals the gods are in the driving seat and what the gods have accomplished is assumed to be permanent (unless or until the gods undertake to reverse the ritual's effects). By contrast, in special patient and special instrument rituals, the gods are seen as the recipients or facilitators of actions undertaken by merely human agents, whose effects are impermanent, necessitating further repetition. This, argue McCauley and Lawson, should serve to make rituals of this kind more frequent. As they put it,

We are arguing that participants' representations of how CPS-agents ['the gods'] are implicated in their religious rituals, ultimately, determine whether or not religious rituals are repeatable as well as the mnemonic dynamics those rituals enlist. Consequently, those representations also determine the rituals' performance frequencies and their levels of sensory pageantry'. (McCauley and Lawson 2002: 43)

Assessing the Two Theories

According to McCauley and Lawson (2002), frequency is the unexplained independent variable in the Whitehouse frequency hypothesis. They argue, in short, that their ritual form hypothesis is capable of explaining the tendency for rituals to cluster around contrasting positions on the frequency scale. My own view is that the explanatory potential of the ritual form hypothesis is somewhat exaggerated in this context, and that of the ritual frequency hypothesis underestimated. Considerations of ritual form may suffice to ensure that most participants in special agent rituals assume the patient role once only, or at least very infrequently. But even if we accept that participation in special patient/instrument rituals is capable of being repeated, there is nothing in the ritual form hypothesis to explain why such rituals are typically repeated as frequently as they are. The real challenge is to explain, not repeatability, but extensive *routinization*. On this front, the ritual frequency hypothesis fares rather better than its rival. The former maintains that rituals of intermediate frequency and arousal provide inadequate foundations either for the transmission of authoritative exegesis or for the generation of spontaneous exegetical reflection. As such, unless some very special conditions apply (as outlined in the next section), such rituals will become extinct. This provides a

way of explaining variations of frequency according to selectional mechanisms, which the ritual form hypothesis cannot.

The ritual form hypothesis maintains not only that form drives frequency but also that it determines relative levels of sensory pageantry. The grounds for this last claim are similar but not identical to those proposed by the frequency hypothesis. In the first place, 'sensory pageantry' is not exactly the same thing as emotional arousal (and recall that the frequency hypothesis makes claims primarily about arousal rather than sensory stimulation). An arguable merit of the McCauley-Lawson strategy is the fact that sensory pageantry is more readily accessible to empirical observation than is the internalized experience of arousal. Nevertheless, McCauley and Lawson are at times incautious in treating levels of sensory pageantry as a reliable index of emotional arousal. Some rituals stimulate a broad spectrum of sensations (sight, sounds, smell, taste, etc.) without necessarily triggering heightened emotional responses. And if sensory pageantry is to be measured in terms of intensity rather than variety, then how is that to be calibrated, even in relative rather than absolute terms? Is louder music more 'intense' than softer music, or brighter colours indicative of greater pageantry than duller ones? Again, it is difficult to map these things directly onto levels of emotional arousal. Indeed, some of the most intensely emotional rituals might be based upon the withholding of sensory stimulation rather than its intensification.

On McCauley and Lawson's view, people expect their special agent rituals to elicit higher sensory pageantry because these are rituals in which the gods are taking a leading role. Acts of the gods intuitively demand suitable fanfare, both to mark the gravity and power of the agency at work and to encourage participants to pay attention to what is happening, to take it seriously. This allegedly has a dual effect. On the one hand, it increases levels of religious motivation, by convincing people that the gods really are intervening in their lives. But McCauley and Lawson also endorse my earlier argument that heightened arousal (which on their view is occasioned by elevated sensory pageantry) helps to trigger episodic recall for the ritual procedures themselves. By making it easier for people to remember the ritual procedures, the emotionality of special agent rituals contributes to their transmissive success. Note, however, that the ritual frequency hypothesis advances a somewhat different claim with regard to the role of episodic memory in ritual transmission. Whereas some of my earlier publications proposed, as McCauley and Lawson have now also done, that episodic recall for rare, climactic rituals played an important role in the preservation of ritual procedures (e.g. Whitehouse 1992), my more recent work in this area has suggested that the ritual procedures are transmitted substantially via other mechanisms of memory, and that the importance of episodic encoding lies mainly in the production of spontaneous thinking about issues of ritual meaning. Private rumination, and the

esoteric religious knowledge resulting from this, is the principal motivational engine driving subsequent transmission of low-frequency, high-arousal rituals.

Form and Frequency: Towards a Synthesis of Competing Models

The transmission of complex religious knowledge requires special supports for learning and memory – and the two most obvious supports are, as indicated at the outset, *repetition* and *arousal*. In order for a corpus of elaborate orthodox teachings to be transmitted, a regime of heavy repetition is indispensable – both in order to learn the teachings, and also in order to ensure that people continue to remember them over time, without garbling or forgetting crucial portions of their content. In a religious tradition based around rarely performed rituals, verbal transmission of authoritative exegesis and doctrine is simply not an option. But elaborate, highly motivating religious knowledge can be constructed by other means, for instance by increasing levels of emotional arousal and thus triggering elongated processes of private rumination pertaining to the significance of religious experiences. Either way, considerations of ritual form are problematized.

In the case of highly routinized rituals, the procedures often take the form of automated habits, stored in implicit, procedural memory (see above). Once this happens, conscious reflection on ritual scripts and meanings (the ‘hows’ and ‘whys’ of ritual performance) is inevitably reduced. ‘Theory of mind’ mechanisms can be more or less effectively bypassed, leading to a suppression of spontaneous interpretation and a greater vulnerability to any official exegesis that may be on offer. If so, we should expect other tacit mechanisms to exercise a diminishing influence, including people’s intuitions about ritual form. I have elsewhere presented ethnographic evidence in support of this argument, based on my studies of absolution rites among Pomio Kivung followers in Papua New Guinea (Whitehouse 2004), and more recent experimental evidence concerning intuitive judgements of ritual form among Christians, Hindus, Jews and Muslims, points in much the same direction (Malley and Barrett 2003).

In the case of low-frequency, high-arousal rituals we are likely to get more or less the opposite effect. Here, reflection on matters of ritual procedure and meaning is driven by explicit episodic memories, and the analogical reasoning that progressively gives rise to personal exegetical insight is somewhat detached from tacit, intuitive judgements. The emphasis is on an unveiling of layers of meaning that are ever more remote from both commonsense and intuitive evaluations. In short, the kinds of intuitive judgements upon which the predictions of the ritual form hypothesis depend, may not figure at all significantly in many religious traditions. If so, does that make the McCauley–Lawson theory redundant? I do not think so.

Where the ritual form hypothesis may be more helpful is in explaining the transmission of rituals that attract neither elaborate authoritative exegesis nor high

levels of 'spontaneous exegetical reflection'. If such rituals are to survive at all, they must have significant intuitive appeal, free from the dampening effects of habituation and the overriding effects of explicit rumination. I have elsewhere described such rituals as 'cognitively optimal' in the sense that they owe their survival to pan-human cognitive susceptibilities rather than to the presence of elaborate and highly motivating explicit religious knowledge of the sort generated via strategies of repetition and arousal (Whitehouse 2004). The nature of these susceptibilities or 'natural propensities' has been explored in a growing body of recent research, particularly by Justin Barrett (2000, 2004), of a technically complex nature which it is beyond the scope of the present discussion to consider in any detail. But we can note that a striking feature of this new research is that it shows how magical rituals, for instance, can be constructed around such intuitively appealing premises that there is no need to develop elaborate exegetical justifications for them, in order to ensure their subsequent transmission. This would also imply that such rituals do not need to fall into the attractor positions indicated above; that is, they can be of intermediate frequency and elicit almost any level of arousal without this having any significant consequences for their cultural survival. And these are, by and large, precisely the kinds of rituals that proliferate in the intermediate position. Moreover, predictably, they are not associated with elaborate orthodox exegesis and do not give rise to significant levels of spontaneous reflection on questions of ritual meaning (see Lewis 2004; see also Whitehouse 2004, for a response). *Nevertheless*, we do find that a portion of cognitively optimal rituals migrates towards our two attractor positions, tending to be either low-frequency/high-arousal or high-frequency/low-arousal, rather than evenly spread across the spectrum. Although the ritual frequency hypothesis as currently constituted cannot explain this observation vis-à-vis cognitively optimal rituals, the ritual form hypothesis might.

Considerations of ritual form may well come into play decisively in determining levels of sensory pageantry (whether or not these correspond to arousal levels) in cognitively optimal rituals, and largely for the reasons McCauley and Lawson (2002) propose. In the case of special agent rituals, people intuitively expect higher levels of sensory pageantry to mark the intervention of the gods, whereas no such requirement is present in the case of special patient/instrument rituals. The same theory can also explain the low frequency of special patient rituals and it can at least help to account for the relatively higher performance frequencies of special patient/instrument rituals. If some of the latter become routinized, this may be because they are modelled on the rituals of religious orthodoxies, rather than because they need to be routinized in order to survive. All such hypotheses are potentially capable of being tested via a combination of experimental and ethnographic investigations across a range of ritual traditions.

Conclusion

Rituals associated with elaborate bodies of exegetical knowledge depend for their survival on strategies of either repetition or emotional arousal, or some combination of both in different domains of the ritual repertoire. The ritual frequency hypothesis is well equipped to explain the cross-cultural recurrence of religious traditions organized on the basis of such strategies. The ritual form hypothesis, although explicitly intended to explain the same phenomena, would seem to be better placed to account for the character and survival of rituals that derive their appeal from intuitive mechanisms rather than from elaborate explicit religious knowledge. The two theories, taken together, hold out the prospect of a testable theory of religious transmission, capable in principle of generalization regardless of the particularities of local cultural/ecological conditions.

Notes

1. Classic work on this topic includes Astington, Harris and Olson (1988); Harris (1989); Wellman (1990); Baron-Cohen (1995).

2. What causal relations, if any, are proposed by a metaphor of mutual shaping (and others like it) is not, however, clear to me.

3. For a discussion of comparable theories, see Whitehouse (1995); Laidlaw (2004); Peel (2004).

4. McCauley and Lawson (2002) make the same point using a different example.

5. Nevertheless, such major differences in levels of arousal are in principle measurable, for instance using galvanic skin response tests or even via less invasive techniques based on the analysis of saliva samples.

6. A much more detailed account of the relationship between ritual routinization and religious persuasion is set out in Whitehouse (2004).

7. Again, this is a relative claim. Some participants in routinized rituals may exhibit high levels of 'spontaneous exegetical reflection', for all kinds of reasons that are unnecessary to discuss here, but the general pattern at a population level is that levels of reflexivity correlate inversely with frequency and directly with arousal.

8. McCauley and Lawson (2002) present a precise and carefully thought-out definition of 'culturally postulated superhuman agents' (or CPS agents for short), based on Boyer's (2002) highly sophisticated theory of the cognitive foundations of representations of extranatural agency. Space does not permit an adequate summary of these arguments, but the general idea is that what makes certain culturally postulated agents 'super' (in the sense of 'superhuman') is that they violate our universal (largely tacit) expectations based on intuitive ontological knowledge

in various domains. For instance, ghosts may conform to standard psychological expectations, but violate intuitive physics by being able to walk through walls or defy gravity. Ancestors may additionally violate some psychological expectations, by being able to read people's thoughts, or to behave in ways that are contrary to their intentions. Referring simply as 'the gods' is intended merely to make the present summary more digestible, but readers should bear in mind that our category of 'the gods' includes all kinds of concepts of superhuman agents (from ghosts and spirits to angels and God) and that a fuller justification of this lumping together of categories may be found elsewhere (especially Lawson and McCauley 1990, McCauley and Lawson 2002).

9. The ritual form hypothesis incorporates a number of additional considerations concerning the structural depth and immediacy of the gods' involvement, which are impacting in various ways on their classification of rituals in terms of agent and special patient/instrument categories. These technical considerations must be taken into account in any detailed consideration of the empirical validity of the McCauley-Lawson model, but such lacunae are set aside here for reasons of space limitations.

References

- Astington, J. W., Harris, P. L. and Olson, D. (eds.) (1988), *Development of Theory of Mind*, Cambridge: Cambridge University Press.
- Atran, S. (2002), *In Gods We Trust*, New York: Oxford University Press.
- Baron-Cohen, S. (1995), *Mindblindness: An Essay on Autism and Theory of Mind*, Cambridge, MA: MIT Press.
- Barrett, J. L. (2000), 'Exploring the Natural Foundations of Religion', *Journal of the Cognitive Sciences* 4: 29–34.
- (2004), *Why Would Anyone Believe in God?* Walnut Creek, CA: Praeger Press.
- Barth, F. (1990), 'The Guru and the Conjurer: Transactions in Knowledge and the Shaping of Culture in Southeast Asia and Melanesia', *Man* (NS) 25: 1–17.
- (2002), 'Review of *Arguments and Icons: Divergent Modes of Religious Experience* (Harvey Whitehouse, Oxford Univ. Press, 2000)', *Journal of Religion* 82: 16: 14–17.
- Benedict, R. (1935), *Patterns of Culture*, London: Routledge and Kegan Paul.
- Bloch, M. (2004), 'Ritual and Deference', in H. Whitehouse and J. Barrett (eds), *The New Comparative Ethnography of Religion: Anthropology and the Study of Modes of Religiosity*, Lanham, MD: AltaMira Press.
- Boyer, P. (2001), *Religion Explained: The Evolutionary Origins of Religious Thought*, New York: Basic Books.

- Brown, D. E. (1991), *Human Universals*, Philadelphia, PA: Temple University Press.
- Cohen, N. J. and Squire, L. R. (1980), 'Preserving Learning and Retention of Pattern Learning Skill in Amnesia: Dissociation of Knowing How and Knowing That', *Science* 210: 207–10.
- Ekman, P. (1989), 'The Argument and Evidence about Universals in Facial Expressions of Emotion', in H. Wagner and A. Manstead (eds), *Handbook of Social Psychophysiology*, Chichester: Wiley.
- Gellner, E. (1969), 'A Pendulum-Swing Theory of Islam', in R. Robertson (ed.), *Sociology of Religion: Selected Readings*, Harmondsworth: Penguin Education.
- Goody, J. (1968), 'Introduction', in J. Goody (ed.), *Literacy in Traditional Societies*, Cambridge: Cambridge University Press.
- (1986), *The Logic of Writing and the Organization of Society*, Cambridge: Cambridge University Press.
- Harré, R. (1986), 'The Social Constructionist Viewpoint', in R. Harré (ed.), *The Social Construction of Emotions*, Oxford: Blackwell.
- Harris, P. L. (1989), *Children and Emotion: The Development of Psychological Understanding*, Oxford: Blackwell.
- Heelas, P. (1986), 'Emotion Talk across Cultures', in R. Harré (ed.) *The Social Construction of Emotions*, Oxford: Blackwell.
- Humphrey, C. and Laidlaw, J. (1994), *The Archetypal Actions of Ritual: A Theory of Ritual Illustrated by the Jain Rite of Worship*, Oxford: Oxford University Press.
- Laidlaw, J. (2004), 'Embedded Modes of Religiosity in Indic Renouncer Religions', in H. Whitehouse and J. Laidlaw (eds), *Ritual and Memory: Towards a Comparative Anthropology of Religion*, Walnut Creek, CA: AltaMira Press.
- Lawson, E. T. and McCauley, R. N. (1990), *Rethinking Religion*, Cambridge: Cambridge University Press.
- Lewis, G. (2004), 'Religious Doctrine or Experience: A Matter of Seeing, Learning, or Doing', in H. Whitehouse and J. A. Laidlaw (eds), *Ritual and Memory: A New Comparative Anthropology of Religion*, Walnut Creek, CA: AltaMira Press.
- Lutz, C. A. (1988), *Unnatural Emotions: Everyday Sentiments on a Micronesian Atoll and their Challenge to Western Theory*, Chicago: University of Chicago Press.
- McCauley, R. N. and Lawson, E. T. (2002), *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms*, New York: Cambridge University Press.
- McGaugh, J. L. (2003), *Memory and Emotion: The Making of Lasting Memories*, London: Weidenfeld and Nicolson.
- Malinowski, B. (1944), *A Scientific Theory of Culture*, Chapel Hill, NC: University of North Carolina Press.

- Malley, B. and Barrett, J. L. (2003), 'Can Ritual Form be Predicted from Religious Belief? A Test of the Lawson–McCauley Hypothesis', *Journal of Ritual Studies* 19 (2): 1–14.
- Peel, J. (2004), 'Modes of Religiosity and Dichotomous Theories of Religion', in H. Whitehouse and J. Laidlaw (eds), *Ritual and Memory: A New Comparative Anthropology of Religion*, Walnut Creek, CA: AltaMira Press.
- Pillemer, D. B., Rinehart, E. D. and White, S. H. (1986), 'Memories of Life Transitions: The First Year in College', *Human Learning* 5: 109–23.
- Shaver, P. R., Wu, S. and Schwartz, J. C. (1992), 'Cross Cultural Similarities and Differences in Emotion and its Representation', in M. S. Clark (ed.), *Review of Personality and Social Psychology, Volume 13, Emotion*, Newbury Park, CA: Sage.
- Tulving, E. (1972), 'Episodic and Semantic Memory', in E. Tulving and W. Donaldson (eds), *Organization of Memory*, New York: Academic Press.
- Weber, M. (1930), *The Protestant Ethic and the Spirit of Capitalism*, London: George Allen and Unwin.
- Wellman, H. (1990), *The Child's Theory of Mind*, Cambridge, MA: MIT Press.
- Whitehouse, H. (1992), 'Memorable Religions: Transmission, Codification, and Change in Divergent Melanesian Contexts', *Man* (NS) 27: 777–97.
- (1995), *Inside the Cult: Religious Innovation and Transmission in Papua New Guinea*, Oxford: Oxford University Press.
- (2000), *Arguments and Icons: Divergent Modes of Religiosity*, Oxford: Oxford University Press.
- (2002), 'Conjectures, Refutations, and Verification: Towards a Testable Theory of Modes of Religiosity', *Journal of Ritual Studies* 16 (2): 44–59.
- (2004), *Modes of Religiosity: A Cognitive Theory of Religious Transmission*, Walnut Creek, CA: AltaMira Press.
- and Laidlaw, J. A. (eds) (2004), *Ritual and Memory: A New Comparative Anthropology of Religion*, Walnut Creek, CA: AltaMira Press.
- and Martin, L. H. (eds) (2004) *Theorizing the Past: Historical and Archaeological Perspectives*, Walnut Creek, CA: AltaMira Press.