

**CAN RITUAL FORM BE PREDICTED FROM RELIGIOUS BELIEF?
A TEST OF THE LAWSON-McCAULEY HYPOTHESES**

Brian Malley
University of Michigan
and
Justin Barrett
University of Michigan

Abstract

Can ritual form be predicted from knowledge of religious beliefs? E. Thomas Lawson and Robert N. McCauley (Lawson & McCauley 1990; McCauley & Lawson 2002) have proposed a cognitive theory of religious ritual according to which the way in which superhuman agents are implicated in the ritual's action structure has consequences for the repeatability, reversibility, and relative sensory pageantry of the ritual in a religious system. We tested their predictions by systematic interviews of participants in the Hindu, Jewish, and Islamic traditions as represented on the campus of the University of Michigan. The Lawson-McCauley predictions were strongly supported by our findings, but our research also raised questions about the causal mechanism they propose, as few of our informants seemed to have clear ideas about the way in which superhuman agents were connected to their rituals.

Can ritual form be predicted, given knowledge of religious beliefs? (1) Anthropologists have long recognized connections between myth and ritual in both performance—myths being ritually retold—and exegesis—ritual actions being interpreted within a cosmological framework supplied by myth. The fact that many rituals have associated myths about their original institution also suggests that these myths function as a kind of charter for their associated rituals. Yet, apart from a fairly vague notion of myth constituting a charter for ritual, anthropologists have been able to say very little about the entailments of one for the other. In this essay, we will review one theory about the connections between myth and ritual and present the results of an empirical assessment of the theory's predictions for rituals in Hinduism, Judaism, and Islam.

The Lawson-McCauley Theory of Ritual

E. Thomas Lawson and Robert N. McCauley (1990; McCauley & Lawson 2002) have proposed a theory of the cognitive representation of ritual forms, a theory that proposes some cognitive connections between the stories people tell about rituals and those rituals' formal properties.

Lawson and McCauley begin by pointing out that religious rituals are actions, and propose that as such they activate the normal cognitive resources used to mentally represent normal, thoroughly mundane actions. Humans' action representation system provides a cognitive template with agent, act, and patient slots for the description of who is doing what to whom. It underwrites a whole range of intuitions about the structure of actions, and thus provides both a rich resource and an organizing constraint on religious ritual forms. Lawson and McCauley offer their specific proposals about religious rituals within the framework provided by the action representation system.

The critical consideration for ritual form, in their model, is the way in which a superhuman agent fits into the action representation: '*Agent causality* (as modified by a religious conceptual system's unique commitments concerning possible agents) *is the dynamic principle of ritual acts and the ultimate basis of ritual*' (1990, emphasis in original). Lawson and McCauley advance two hypotheses that hinge on agent

causality. They offer these as predictions about the relative centrality of a ritual in a religious system. The first principle is that of Superhuman Agency (1990, 124-125):

The Principle of Superhuman Agency concerns where the superhuman agent appears in a ritual's structural description. The issue at stake is *the character of the superhuman agent's involvement* in the ritual. Those rituals where superhuman agents function as the agent in the ritual (for example, when Jesus institutes the church) will always prove more central to a religious system than those where the superhuman agents serve some other role (as, for example, when they serve as the passive recipient of a sacrifice). In short, the most central religious rituals are always those where the gods themselves directly act.

The Principle of Superhuman Agency divides rituals into two general types: those in which a god (2) is implicated as an agent and those in which a god is implicated otherwise. Lawson and McCauley call rituals in which a superhuman agent is implicated in an agentive role *special agent* rituals; others are called *special patient* or *special instrument* rituals, depending on whether the gods are implicated as a patient (i.e., those acted upon), or through the mediation of some ritual element that serves as an efficacious instrument (e.g., use of holy water for blessing).

The second principle Lawson and McCauley advance is the Principle of Superhuman Immediacy: "the fewer enabling actions to which appeal must be made in order to implicate a superhuman agent, the more fundamental the ritual is to the religious system in question" (1990, 125). Because many actions presuppose other actions, the action representation system allows for the structural embedding of actions. In a complex structure with possible multiple embeddings, Lawson and McCauley attribute greater centrality to the rituals presupposed than to the rituals that presuppose them. The more directly a superhuman agent is involved, the more important the ritual.

Lawson and McCauley offer further predictions that hinge on the Principle of Superhuman Agency (1990: 127): 'The rituals categorized [as special agent rituals] are at least potentially reversible, and they do not require repetition. [Other] rituals. . . are not (ritually) reversible, and by contrast, they must be repeatedly performed.' Subsequently, they have further hypothesized (McCauley & Lawson forthcoming, chapter 2) that special agent rituals will involve relatively heightened sensory pageantry for the patient, giving rise to heightened emotionality, heightened attention, and thus heightened memorability (on the relation between heightened emotionality and heightened memorability see also Whitehouse 1995; 2000). They claim, then, that special agent rituals are emotional, involve relatively heightened sensory pageantry, are unrepeatable, and are (at least potentially) reversible.

Lawson and McCauley have therefore proposed a precise ritual theory in which religious rituals are constrained by assumptions about the structure of action and by the mythology that informs the ritual structure. The action representation system organizes rituals into discrete actors, instruments, and agents, and provides an implicational framework within which rituals may be interrelated. Mythology, by stipulating where in the action structure a superhuman agent fits, *causally affects* a ritual's relative centrality, repeatability, reversibility, sensory pageantry, and emotionality.

The Lawson-McCauley proposal is particularly interesting because it suggests that even religious rituals—often regarded as a clear case of purely cultural variation—are informed and constrained in very precise ways by human cognitive architecture, and that there is more to the psychology of religious ritual than alpha waves and symbolism.

Method

The specificity of the Lawson-McCauley model invites empirical assessment. Some assessment, using fictitious rituals, has been carried out by Justin Barrett (Barrett 2002; Barrett & Lawson 2001), but the overall claims have never been systematically examined with respect to real rituals in living ritual systems. An ethnographic or historical test is not easily carried out: part of the difficulty in testing their claims is that the ethnographic record is of uneven quality with respect to the relevant information, and also that actual rituals are often somewhat different from normative ideals. But part of the problem too is that Lawson and McCauley cast their theory as a *competence model*, that is, a model of what people judge

to be ideal. They model their competence theory after the Chomskyan approach to linguistics, in which it is the ideal sentence, not the stuttered or interrupted utterance, that serves as the theoretical object. (Competence theorizing, in a broad sense, is quite common in social theory, inasmuch as theories are cast in terms of the intentions and understandings of actors rather than the exigencies of actual behavior.) One cannot therefore simply examine ritual performances.

We decided to test the theory in three religious traditions, Hinduism, Judaism, and Islam, as these traditions are represented on the campus of the University of Michigan. We contacted campus organizations for each of these religions, and asked their help in recruiting informants. The research assistants who conducted the interviews were themselves participants in the religious tradition for which they gathered data. Use of organization-selected informants and religiously involved interviewers doubtless bent our data toward orthodoxy or orthopraxy, which we hoped would increase the representativeness of our sample.

It will be noted that our method created the possibility that informants would report different sets of rituals, and that they would understand the same ritual in different ways. Rituals are very often only loosely standardized, and we wanted our method to allow for this on-the-ground variability.

In interviews, we gave informants a simplified version of the Lawson-McCauley ritual definition and asked what actions in their religions might be rituals.⁽³⁾ For each ritual that informants identified, the interviewer asked for a description so as to determine how each informant understood each ritual's relation to a superhuman agent. We reserved the ultimate decision of whether a ritual was a special agent ritual for ourselves, however, because there was no practical way to explain the nuances of the Lawson-McCauley theory to informants. Follow up questions ascertained whether informants regarded the ritual as reversible, repeatable, relatively emotional, and involving relatively high sensory pageantry for the participant.

Results

In what follows, we will report participants' judgments on each of the rituals they mentioned before evaluating the overall results. It is important to note that informants often disagreed whether a particular named religious act met the Lawson-McCauley definition for a ritual. This appeared to be due not to ambiguity in the Lawson-McCauley criteria, but to differences in individuals' understanding of particular religious acts.

A. Hinduism

Seven Hindus (five male, two female) were interviewed. All but one considered themselves devout and considered their religion important to their identity. All attended the temple either annually or monthly, and all prayed daily.

A1. Thread ceremony

Six informants mentioned the thread ceremony (also called the punnel ceremony or munja) as a ritual. The thread ceremony is a type of "coming of age" ceremony for Brahman males. The ritual typically occurs before a boy reaches puberty, although one informant indicated that the ceremony could be postponed until another large occasion for the sake of convenience, but must be tied prior to marriage. Most participants agreed that the ritual involved the tying, by a priest, of a string on a boy, though one participant said that it was tied by an elderly Brahman, in the presence of a priest. Informants varied in their interpretation of the ritual: one person suggested that the string gives the individual the power to chant Vedic verses and perform other rituals; another stated that the string gave the boy the power and rights of being a Brahman; the remaining participants said that this is merely a symbol of a boy reaching manhood.

Because of the requisite role of the priest, we interpret the thread ceremony as a special agent ritual. Although our informants were uncertain as to exactly what qualified a person as a priest, they clearly considered priests a special class of individual.

All informants agreed that the thread ceremony was not repeatable.(4) All informants but one said the thread ceremony was not even potentially reversible. Informants rated the thread ceremony high in emotionality (M=7.5) and sensory pageantry (M=6.8).

A2. Wedding ceremony

Four informants mentioned the wedding ceremony. Wedding ceremonies vary depending upon what part of India one's family is from. However, some basic elements are common to all marriages. A priest conducts the marriage, and the aim is to connect two individuals, thus changing their social status.

Three responses described a marriage in which the bride and groom are tied together (by a knot in their clothing) and are sitting by a fire. At a certain time in the ceremony, the priest tells the bride and groom to walk around the fire, a specific number of times. Each round signifies different blessings (such as long life, prosperous family, etc).

One informant described another type of marriage ceremony characteristic of Sikhism. Instead of sitting around the fire, the bride and groom sit around a sacred book. This book is viewed as a god and the bride and groom walk around the book instead. Even though this is closer to Sikhism, the participant explaining it considered himself Hindu. He explained that he described a traditional Sikh wedding ceremony as opposed to a Hindu one because his family is from North India, where Sikhism and Hinduism are merged.

The wedding ceremony is a special agent ritual, again because of the role of the priest.

Three informants said that the wedding could not be repeated (5); one stated that it could. All informants agreed, however, that it was not reversible. All informants but one rated marriage high in emotionality (M=10.0) and sensory pageantry (M=9.3). The remaining informant assigned these variables a 3, resulting in overall means of 8.3 for emotionality and 7.8 for sensory pageantry.

A3. Abhishekam

Four informants mentioned the ritual of abhishekam. Abhishekam is a ritual performed at the beginning of a puja, a festival of worship to a god. This ritual is the act of washing the deity with certain liquids. Before washing the deity, certain verses are read in which the participant calls upon the god to enter into the household, and reside in the idol. After calling upon the god, the participant pours a mixture of certain liquids on the idol. This action symbolizes cleaning the god, offering him drinks, refreshing him, etc. Essentially, abhishekam is welcoming the god into one's household, and treating him as an honored guest (i.e. by bathing him, offering different things, etc).

Abhishekam is a special patient ritual, because it is performed on an idol/deity (an idol into which the god has previously been invoked).

Informants agreed that abhishekam is repeatable but not reversible. They rated it medium in emotionality (M=6.0) and sensory pageantry (M=5.0).

A4. Aarhi

Three informants mentioned aarhi as a ritual. Aarhi is a ritual performed at the end of a puja. For aarhi, there is a lighted candle (*devo*) and this is shown to pictures of the god(s). The participant takes the *devo* and circles it clockwise around the picture/deity. This action shows respect to the god and gives the god thanks for residing in the picture/deity for the duration of the puja.

Aarhi is a special patient ritual, because the action is performed on a picture/deity.

Informants agreed that aarthi was repeatable but not reversible. They rated it high in emotionality (M=8.3) and medium in sensory pageantry (M=5.3).

A5. Raksha Bandhan

Three informants mentioned the ritual of raksha bandhan. This ritual involves a brother and sister. Every year, the sister ties a special string, called a “rakhi” onto her brother’s wrist. In return, the brother gives the sister money or gifts. The string is tied to protect the brother from evil, to ensure him good fortune. The gifts are the brother’s way of thanking the sister for the blessing.

Because of the role of the string, we interpret raksha bandhan as a special instrument ritual. Our informants indicated that the rakhi is a special string—not just any string will do. The rakhi is purchased as such, but our informants were not sure what precisely made a rakhi special.

Informants agreed that raksha bandhan is repeatable and not reversible. Informants disagreed about its emotionality: one rated it low (3), the other two rated it high (9, 10). Informants rated raksha bandhan as medium in sensory pageantry (M=6.3).

A6. Overall results for Hinduism

Fire walking, janmastami (a celebration of Krishna’s birthday), animal sacrifice, and other rituals were also mentioned, but have not been included here because of the low frequency with which they were reported. The overall results are summarized in Table 1. Judgments that do not agree with the Lawson-McCauley predictions are in bold.

Ritual	Special	Repeatable	Reversible	Emotional	Sensory pageantry
Thread	Agent	No	No	High	High
Wedding	Agent	No	No	High	High
Abishekam	Patient	Yes	No	Medium	Medium
Aarthi	Patient	Yes	No	High	Medium
Raksha Bandhan	Instrument	Yes	No	<i>Mixed</i>	Medium

Table 1: Synopsis of Hindu Responses

The Lawson-McCauley predictions are consistently supported by the repeatability judgments. They are also substantially supported by the ratings of sensory pageantry, in that special agent rituals were judged to have more sensory pageantry than other rituals.

The Lawson-McCauley predictions are partly challenged by reversibility judgments. They predict the abishekam, aarthi, and raksha bandhan would be non-reversible, and indeed informants reported that these rituals were indeed non-reversible. But Lawson and McCauley predict that the thread and wedding rituals, both involving special agents in the agent role, would be at least potentially reversible. Yet our informants uniformly said reversal of the wedding ritual was not possible: one even made a point of saying that even if divorce is legally possible, it is not “spiritually” possible—the couple remains ritually joined.

Five of six informants said that the thread ceremony was not reversible, in contradiction of the Lawson-McCauley predictions. The thread ceremony is a coming-of-age ritual, in that its timing and its significance are both understood in terms of the individual’s life span. Intuitively, then, one might expect it to be irreversible, just as the course of life is irreversible. Nonetheless, this finding clearly contradicts the Lawson-McCauley predictions.

B. Judaism

Seven Jewish informants (4 female, 3 male) were interviewed. All regarded themselves as fairly devoted participants in the tradition and indicated that their religion was very important to their identity.

B1. Bris

All seven informants mentioned the bris as a ritual. In the bris, an eight-day-old male child is circumcised by a mohel. A mohel is a religious Jew who is trained in circumcision. The circumcision creates the covenant between the male child and God; it makes the child a part of the Jewish faith.

According to some bris prescriptions, the father is the preferred agent of circumcision, but, since he is seldom appropriately trained to carry it out, he delegates the task to a mohel. Our informants, however, seemed to think that the mohel was necessary. They were uncertain as to the procedure by which a person became a mohel, but seemed to regard mohels as a special class of person, uniquely eligible to carry out the bris. The tradition of the bris extends, in Jewish mythology, back to Abraham, who was the agent of the first circumcisions (including his own). We therefore interpret the bris as a special agent ritual.

All agreed that the ritual was not repeatable on the same patient; six agreed that the ritual was not even potentially reversible. Informants rated the bris low in emotionality for the patient ($M=1.0$), who was said not even to feel it, but four informants suggested that the ritual is high in emotionality for the parents ($M=7.9$). (6) Informants gave widely varying judgments about its sensory pageantry ($M=5.3$, but $SD=2.5$).

B2. Bar/Bat Mitzvah

Six informants mentioned the bar/bat mitzvah as a ritual. In this ritual, a 13-year-old boy (bar mitzvah) or 12-year-old girl (bat mitzvah) goes before the congregation and says a blessing over the Torah reading. The bar/bat mitzvah is then recognized as an adult in the eyes of the congregation, and is obligated to follow Jewish laws and commandments.

Although the bar mitzvah celebration is not, according to some experts, required for a boy to enter into adulthood, our informants seemed to regard the bar mitzvah as a transformative ceremony. Since the transformation is accomplished by the utterance of the ritually prescribed blessing, we interpret the bar mitzvah as a special instrument ritual. Many forms of the bat mitzvah may be interpreted along similar lines.

Informants agreed that this ritual was neither repeatable nor reversible. They rated this ritual high in emotionality for patient ($M=8.2$) and high in sensory pageantry ($M=9.0$).

B3. Wedding

All seven informants mentioned the wedding as a ritual. In this ritual, the couple stands under a canopy held up by four poles, the chuppah, they recite seven blessings, and there must be at least ten religious Jews present. The couple drinks wine, and smash a glass or plate, and the two are now married.

The wedding seems to be a special instrument ritual, in that the actions are all performed by the bride and groom, and it is their own status that they transform. While it is common for a rabbi to be present, he plays no part in the ritual.

All informants agreed that this ritual could not be repeated.(7) Six informants said that the ritual could be reversed. They rated this ritual high in emotionality for patient ($M=9.3$) and high in sensory pageantry ($M=8.1$).

B4. Conversion

Six informants mentioned conversion as a ritual. In conversion a non-Jew studies Judaism, and Jewish law. (S)he then goes before a court of religious Jews, including at least one rabbi, which decides if (s)he may become Jewish. If the panel approves the conversion, the non-Jew goes to the mikvah and is completely immersed in water, while the panel of Jews stands nearby. If the non-Jew is male, he must be circumcised. The new convert is then given a new, Jewish name, and is considered Jewish.

Because of the role of rabbis in the training, evaluation, and naming (and the role of the mohel in circumcision), we interpret conversion as a special agent ritual.

Five informants said that this ritual was not repeatable; the sixth said it was. Four informants said it was not ritually reversible; three said it was. Informants rated this ritual high in emotionality for patient (M=9.7) but low in sensory pageantry (M=2.8).

B5. Mikvah

Four informants (1 male—a convert, 3 female) mentioned the mikvah as a ritual. The mikvah is used for ritual cleansing. The mikvah is a pool of fresh and moving water. The water is blessed and a person completely submerges, her/himself in it. Married women go to the mikvah 12 or 14 days after the start of their period. A woman is not permitted to have sex with her husband from the beginning of her period until she has gone to the mikvah. All adults can go to the mikvah when they feel they are in need of cleansing, and it is required before some ceremonies.

The water has a connection to some natural body of water as prescribed by Jewish commandment. Because the water seems to be instrumental in the ritual purification of a person, and no special characteristic is required of the agent or patient, we regard the mikvah as a special instrument ritual.

Informants agreed that this ritual was repeatable but not reversible. They rated this ritual low in emotionality for patient (M=3.8) and low in sensory pageantry (M=1.3).

B6. Burning Chametz

Six informants mentioned burning chametz as a ritual. In preparation for Passover, an 8-day period when Jews are not permitted to eat leavened food, Jews clean their homes completely. All the leavened and leavening products (chametz) are removed from the home, and everything is cleaned for possible crumbs. Finally, six (8) pieces of chametz are placed in the areas where leavened products are generally stored. The chametz is gathered up with a feather and a dustpan and then burned. This ritual cleanses the house of all chametz. Because the removal of chametz was directly prescribed by God through Moses, we regard the removal of chametz as a special instrument ritual.

Informants agreed that this ritual was repeatable, and most (4) said it was not even potentially reversible. Informants rated this ritual low in emotionality for patient (M=2.2) and low in sensory pageantry (M=2.1).

B7. Lighting Shabbat candle

Five informants mentioned the lighting of the Shabbat candle as a ritual. On Friday night just before sunset two candles are lit and blessed. This ends the normal work week and begins Shabbat (the Sabbath). These candles should not be put out.

The lighting of the Shabbat candle is a special instrument ritual, because the lighting of the candle marks the beginning of the Sabbath.

All agreed that this ritual is repeatable; four said that it was not reversible, but the fifth thought whether it is reversible or not depends on the day of the week. Informants rated this ritual high in emotionality for patient (M=7.2) but low in sensory pageantry (M=3.1).

B8. Havdalah

Five informants mentioned the havdalah as a ritual. On Saturday night just after sunset, a three-wicked candle is lit, a spice box is passed around, and the candle is extinguished by putting it into a glass of wine. This ends Shabbat, and starts the week.

Havdalah is a special instrument ritual, on the same grounds that the lighting of the Shabbat candle is so interpreted.

Informants agreed that this ritual was repeatable but not reversible. They rated this ritual low in emotionality for patient (M=3.6, but SD=2.7) and medium in sensory pageantry (M=4.8, but SD=2.8).

B9. Mezuzah

Five informants mentioned mezuzah as a ritual. A rectangular shaped box holding a handwritten scroll of a section of the Torah (Deut. 6.4-9; 11.13). The mezuzah is placed at a 45° angle on the doorpost of the house. This makes the home kosher and allows a Jew to live in the house.

The mezuzah is a special instrument ritual, because the special agent is implicated through use of the Torah.

Informants agreed that this ritual is not repeatable (9) and is reversible. Informants rated this ritual low in emotionality for patient (M=3.4) and low in sensory pageantry (M=2.2).

B10. Overall results for Judaism

A few informants mentioned other rituals—the wearing of a kind of shawl (the tallit), the ordination of rabbis, the naming of babies, etc.—but with such low frequency that we have not included them here. The overall results are summarized in Table 2. Again, judgments that do not agree with the Lawson-McCauley predictions are in bold.

Ritual	Special	Repeatable	Reversible	Emotional	Sensory pageantry
Bris	Agent	No	No	Low	<i>Mixed</i>
Bar/Bat Mitzvah	Instrument	No	No	High	High
Wedding	Instrument	No	No	High	High
Conversion	Agent	No	<i>Mixed</i>	High	Low
Mikvah	Instrument	Yes	No	Low	Low
Burning Chametz	Instrument	Yes	No	Low	Low
Lighting Shabbat Candle	Instrument	Yes	No	High	Low
Havdalah	Instrument	Yes	No	Low	Medium
Mezuzah	Instrument	No	Yes	Low	Low

Table 2: Synopsis of Jewish Responses

The Lawson-McCauley predictions about repeatability and reversibility are generally supported. The exceptions, however, are interesting: the bris, the bar/bat mitzvah, and weddings are all rituals tied to the course of life. (Weddings might not occur at a specified age, but there is clearly an association—especially strong in Jewish communities—between marriage and full adulthood.) As with the results from Hinduism, life-course rituals seem to be unrepeatable and irreversible regardless of their ritual form.

The emotionality judgments for the bris seem to contravene the Lawson-McCauley predictions. Lawson and McCauley predict that special agent rituals will involve heightened sensory pageantry and emotionality *directed at the participants*, those directly involved in the action. The parents in a bris are not participants in Lawson & McCauley's technical sense, but they are the ones, not the baby, who are

said to experience the heightened sensory pageantry and emotion. *Strictly speaking*, Lawson & McCauley's prediction is disconfirmed in this instance.

Yet the bris presents special problems of interpretation. First, our informants' ratings are being recalled rather than intuited: there is a widespread story that the infant's nervous system is not developed enough to feel anything when he is circumcised. This story may work to counteract the otherwise seemingly intuitive conclusion that the baby feels what is happening to him. Second, our informants clearly regarded the parents as participants in the ritual (as opposed to non-participating onlookers). The emotionality judgments for the bris therefore suggest that Lawson & McCauley may need to expand their ritual formalism to accommodate indirect participants, much the way they have already expanded it to include special instruments (1990).

The lighting of the Shabbat candle and the havdalah raise another interesting issue. The lighting of the Shabbat candle was said by our informants to *signify* the beginning of the Sabbath. The lighting of the candle did not, on this understanding, actually effect the Sabbath. The story for ending the Sabbath, however, was different: here one informant in particular was adamant that the Sabbath would not end unless the havdalah was performed.

Lawson & McCauley's theory specifies that a ritual action must transform the ritual object. They do not address the possibility that a ritual action might merely *signify* a transformation that is not thereby effected. But there is a critical ambiguity here in the very nature of social action: when the ritual transformation is a matter of convention rather than observable fact, there may be *no distinction* between the signaling of a transformation and its actual performance. The successful performance of such rituals is ultimately a matter of their ability to communicate the transformation in a plausible way to observers. This may account also for our informants' conflicting judgments about whether the ritual action signified or began the Sabbath.

A third issue raised by the Jewish responses has to do with what counts as a special instrument. Five of the above rituals—the wedding, the mikvah, the burning of chametz, the lighting of the Shabbat candle, and the havdalah—we have interpreted as special instrument rituals because the Lawson-McCauley rules require that some element be connected to a superhuman agent, and we could find no such connection through the agents or patients. This forced interpretation received some support from that fact that, in each of these cases, the instruments were prescribed as part of the definition of the rituals. Yet our informants did not seem to know what, if anything, was special about these instruments beyond the fact that they are prescribed for the ritual. We would be more confident in our own interpretations if there was evidence, independent of the ritual prescription, for the special nature of these instruments.

C. Islam

Eight Muslims (3 male, 5 female) were interviewed. All considered themselves relatively devout, and considered their faith very important to their identity.

C1. Marriage

All informants mentioned marriage as a ritual. Marriage was described as the union of two people, usually done in the presence of an imam, a religious leader. The ritual involves reading from the Qur'an. The marriage officially takes place when the imam asks the husband and wife sign the marriage contract in the presence of the imam. Witnesses are usually present as well.

Our informants seemed to think of marriage as something that an imam does to a willing and eligible couple, rather than as something the couple does for themselves. This contrasts with the understanding of marriage usually derived from Islamic law, but seems to accord fairly well with actual practice. Certainly our informants regarded an imam as necessary for an efficacious wedding. We therefore interpret marriage as a special agent ritual.

Five informants said that the marriage ritual was not repeatable and that it was reversible (the remaining three informants did not say). All informants rated marriage high in emotionality ($M=9.5$) and sensory pageantry ($M=8.63$).

C2. Divorce

Five informants mentioned divorce as a ritual. Informants were not as sure about the ritualistic description of divorce, but they agreed that it's done with an imam and that it can reverse a lifetime marriage and render a husband and wife as strangers (two separate entities after they had been unified in marriage).

The specification of divorce procedures in Islamic law describes a ritual in which a man utters formulaic words at specified times in the presence of certain kinds of witnesses. Our informants, however, described an imam as being necessary for the procedure, and seemed to regard the divorce as something the imam did. We therefore conclude that, whatever the actual Islamic legal procedure, our informants considered divorce a special agent ritual.

All informants said that the divorce ritual was not repeatable and that it was reversible. All informants rated divorce high in emotionality ($M=8.6$). Four informants considered divorce low in sensory pageantry (1, 1, 2, and 4), but one considered it high (10), resulting in a mean of 3.6.

C3. Hajj

Seven informants mentioned the pilgrimage to Mecca as a ritual. The hajj was described as the visit to the Kaaba. It is something that Muslims are required to do. Many said that it did not necessarily require an imam, but that people usually get in groups there, which are led by an imam. The prayer there is conducted by an imam.

The visit to the Kaaba was modeled by Muhammad, and the actions are focused around the Kaaba, which forms the focal object of the pilgrimage. We therefore interpret the hajj as a special patient ritual.

Informants agreed that the pilgrimage was repeatable. All informants but one regarded it as irreversible. Informants rated it high in emotionality ($M=10.0$) and high in sensory pageantry ($M=8.4$).

C4. Wuduu

Six informants mentioned wuduu as a ritual. This is the washing that is done before prayer (and whenever one must be clean for a religious act, i.e. reading the Qur'an). It involves washing certain body parts while saying a prescribed set of intentions. Though it is physically only a washing (cleansing of the washed body parts), it is said to cleanse the entire body and the soul.

Wuduu is a special instrument ritual, because the special agent is implicated through the example of Muhammad using water.

All informants agreed that wuduu is repeatable. All but one agreed that it is not even potentially reversible.⁽¹¹⁾ They rated wuduu medium in emotionality ($M=4.8$) and medium in sensory pageantry ($M=4.2$).

C5. Overall results for Islam

Individual informants also mentioned other religious acts—baby initiation, putting a Qur'an under a child's pillow for protection from jinn, tasbeeh, etc.—as rituals, but these were mentioned so infrequently that we have not included them.

The overall results are summarized in Table 3 (below).

Ritual	Special	Repeatable	Reversible	Emotional	Sensory pageantry
Marriage	Agent	No	Yes	High	High
Divorce	Agent	No	Yes	High	Low
Hajj	Patient	Yes	No	High	High
Wuduu	Instrument	Yes	No	Medium	Medium

Table 3: Synopsis of Muslim Responses

The results for repeatability and reversibility closely support the Lawson-McCauley predictions.

The Lawson-McCauley predictions for sensory pageantry are clearly not confirmed: the height of sensory pageantry surrounds the hajj, a special patient ritual; conversely, divorce is a special agent ritual with little sensory pageantry.

Conclusion

The overall results for repeatability and reversibility are reported in Table 4 (see below).

The Lawson-McCauley hypotheses predicted the repeatability and reversibility of rituals at levels far above chance. Moreover, the exceptions are largely of a single type: life-course rituals. (The other exception—the messuzzah—remains anomalous.) The success of the Lawson-McCauley hypotheses in predicting participants' judgments about repeatability and reversibility is striking given that the hypotheses base their predictions exclusively on the way in which special agents are implicated in the ritual structure.

Rituals	Special?	Repeatable?	Reversible?
<u>Hinduism</u>			
Thread	Agent	No	No
Wedding	Agent	No	No
Abishekam	Patient	Yes	No
Aarthi	Patient	Yes	No
Raksha Bandhan	Instrument	Yes	No
<u>Judaism</u>			
Bris	Agent	No	No
Bar/Bat Mitzvah	Instrument	No	No
Wedding	Instrument	No	No
Conversion	Agent	No	Mixed
Mikvah	Instrument	Yes	No
Burning Chametz	Instrument	Yes	No
Lighing Shabbat Candles	Instrument	Yes	No
Havdalah	Instrument	Yes	No
Mezuzah	Instrument	No	Yes
<u>Islam</u>			
Marriage	Agent	No	Yes
Divorce	Agent	No	Yes
Hajj	Patient	Yes	No
Wudu	Instrument	Yes	No
Accuracy		15 of 18 p=0.004	13 of 17 p=0.025

Table 4: Overall Interview Results for Repeatability and Reversibility

Their predictions about the relatively heightened sensory pageantry and emotionality of special agent rituals are also largely borne out. Table 5 compares, for each tradition, the emotionality of each special agent ritual with each special instrument or special patient ritual.

	Special agent	vs.	Special instrument/patient	Emotionality prediction fit?	Sensory pageantry prediction fit?
Hindu	Thread	vs.	Abishekam	Yes	Yes
			Aarthi	No	Yes
			Raksha Bandhan	Yes	Yes
	Wedding	vs.	Abishekam	Yes	Yes
			Aarthi	---	Yes
			Raksha Bandhan	Yes	Yes
Jewish	Bris	vs.	Bar/Bat Mitzvah	No	No
			Wedding	No	No
			Mikvah	Yes	Yes
			Burning Chametz	Yes	Yes
			Lighting Shabbat Candles	Yes	Yes
			Havdalah	Yes	Yes
			Mezuzah	Yes	Yes
	Conversion	vs.	Bar/Bat Mitzvah	Yes	No
			Wedding	Yes	No
			Mikvah	Yes	Yes
			Burning Chametz	Yes	Yes
			Lighting Shabbat Candles	Yes	No
			Havdalah	Yes	No
			Mezuzah	Yes	Yes
Muslim	Marriage	vs.	Hajj	No	Yes
			Wuduu	Yes	Yes
	Divorce	vs.	Hajj	No	No
			Wuduu	Yes	No
Accuracy				18 of 23 p=0.003	16 of 24 p=0.076

Table 5: Comparison of emotionality and sensory pageantry in special agent and other rituals

Systematic comparison shows that the Lawson-McCauley predictions for emotionality are statistically significant. Their predictions for sensory pageantry are also above chance, though falling slightly short of the conventional standard of $p < 0.05$. (12)

Our research did, however, raise a serious difficulty for the Lawson-McCauley theory. Frequently informants did not know how a ritual implicated a superhuman agent. Some rituals either do not have mythology surrounding their institution, or, if they do have it, our informants were unaware of it. (13) (Our aforementioned difficulty with interpreting several Jewish rituals is related to this general problem.) This poses a significant challenge to the Lawson-McCauley theory because Lawson and McCauley have proposed a cognitive model in which people use information about the link to a superhuman agent to produce judgments about the repeatability, reversibility, and relative centrality of a ritual. But our informants made these judgments without seeming to have this information.

Now it is clear that humans have only incomplete or distorted introspective access to many—probably

most—cognitive processes. In general, informants' inability to describe their own mental representations is no objection to a cognitive theory. Yet information about a ritual form's connection to a superhuman agent is—must be—culturally transmitted. It is hard to see how it could be transmitted in anything other than an explicit fashion, and we think it unlikely that this bit of information, if genuinely crucial to ritual understanding, had been forgotten.

It is not obvious how Lawson & McCauley's theory could be reinterpreted to accommodate this result. One possibility might be that ritual cognition is distributed such that one individual has part of it and another individual has another part of it (on the notion of distributed cognition, see Hutchins 1995). But Lawson and McCauley's model seems to leave little room for fragmentation—it is an internally dynamic model. Another possibility is that what Lawson and McCauley have proposed is not a model of ordinary folks' ritual representations but a model of ritual *expertise*. (We consider this possibility despite the fact that Lawson and McCauley *contrast* the folk knowledge modeled in their theory with that of experts (1990: 134)—this is not an interpretation they intend.) In this scenario, the ritual experts would be the ones with all the relevant knowledge, and it is they who would determine a ritual's repeatability, reversibility, and so forth. Our informants, none of whom were ritual experts, would then be merely repeating the repeatability and reversibility determinations made by others. Yet this interpretation of their theory seems doubtful. Ritual experts have many forms of knowledge about ritual beside knowledge of its connection to a superhuman agent.

Knowledge of how a ritual implicates a superhuman agent does not seem to be a prominent part of ritual expertise—having it does not make one an expert. Neither does it seem to be among the items of knowledge sometimes *deliberately reserved* for experts. This interpretation, then, might present more empirical difficulties than it solves. The question of how participants are able to make the judgments Lawson and McCauley predict thus remains outstanding.

Lawson and McCauley have clearly identified some important factors in the structure of religious rituals. The significant ability of their model to predict, on the basis of a ritual's mythology, ordinary practitioners' intuitions about its repeatability and reversibility, is remarkable, and reveals a previously unanticipated kind of connection between myth and ritual. Myth has long been viewed as a kind of charter for ritual, but until Lawson and McCauley's work this relation was conceived in only the most general sense. Lawson and McCauley have shown that the connection extends beyond the general motivation to perform a ritual and influences the ritual's form and the permanence of its putative effects.

Endnotes

1. We are grateful to two anonymous reviewers for their comments on an earlier draft of this paper.
2. The term "god" is used loosely, to stand in metonymically for a variety of superhuman agents, i.e., beings that are regarded as capable of effecting transformations beyond the abilities of normal human beings.
3. From the interviewer script: "For our purposes, we'll define a religious ritual as an action in which someone does some kind of physical act to a person or an object and this action evokes an unnatural result. The action also has to be somehow tied to a supernatural being, either the person who is performing the action, the object being used to perform the action, or the thing that the action is being performed on. This action has to be religiously motivated."
4. One informant said that the thread was replaced annually, but without repetition of the thread ceremony.
5. One of these informants said that the wedding ceremony could be repeated, but only in the case of an intervening divorce. The wedding could not be repeated without such an intervening ritual reversal.
6. Our interviewer was initially puzzled by the rock-bottom ratings for the infant's emotionality, until our fourth interviewee volunteered that the bris, while no big deal for the baby, was very emotional for the parents. In subsequent interviews informants were asked to give ratings for the parents, and all rated the bris as highly emotional for the parents, but not for the infant.
7. Several informants said the wedding ceremony could be repeated if there was an intervening divorce. The wedding could not be repeated without such an intervening ritual reversal.
8. The number of pieces varied from one subject to another.
9. Informants said that the mezuzah could be repeated on the same house, but *only if previous performances had been ritually reversed*. Once the mezuzah has been performed on a house, it does not need to be repeated unless so reversed.
10. We say "approximately the same" because, for reasons we discuss in the conclusion, it was impossible to determine at what precise level of embedding they implicated a superhuman agent.
11. The same informant who said the Hajj was potentially reversible also said that wudu was potentially reversible.

12. The correlation between emotionality and sensory pageantry ($r=0.66$) suggests that Lawson and McCauley are substantially justified in using sensory pageantry as a stand-in for emotionality in their analyses.
13. Many rituals find their connection to a special agent in the story of their institution. Others, such as the aarthi, find it in their interpretation. But for many rituals our informants seemed to have no idea how it might be connected to a superhuman agent.

References

- Barrett, J. L.
2002 Dumb gods, petitionary prayer, and the cognitive science of religion. In *Current Approaches in the Cognitive Study of Religion*. V. Anttonen and I. Pyysiainen, eds. London: Continuum.
- Barrett, J. L. & E. T. Lawson
2001 "Ritual Intuitions: Cognitive contributions to judgments of ritual efficacy". *Journal of Cognition and Culture* 1(2):183-201.
- Hutchins, E.
1995 *Cognition in the Wild*. Cambridge, MA: The MIT Press.
- Lawson, E. T. & R. N. McCauley
1990 *Rethinking Religion: Connecting Cognition and Culture*. Cambridge: Cambridge University Press.
- McCauley, R. N. & E. T. Lawson
2002 *Bringing Ritual to Mind*: Cambridge University Press.
- Whitehouse, H.
1995 *Inside the Cult: Religious Innovation and Transmission in Papua New Guinea*. Oxford: Clarendon Press.
- 2000 *Arguments and icons: divergent modes of religiosity*. Oxford: Oxford University Press.

Biographical Sketch

Brian Malley received his MA in Comparative Religion from Western Michigan University and his Ph.D. in Anthropology from the University of Michigan, where he also participated in the Culture & Cognition Program. His research focuses on scripturalism in comparative perspective and on the dynamics of religious ritual.

Having received his Ph.D. in experimental psychology from Cornell University, Justin Barrett is a former professor of psychology at Calvin College and the University of Michigan's Culture and Cognition Program. This article was supported by a grant to Dr. Barrett by the John Templeton Foundation.

Copyright and Use:

As an ATLAS user, you may print, download, or send articles for individual use according to fair use as defined by U.S. and international copyright law and as otherwise authorized under your respective ATLAS subscriber agreement.

No content may be copied or emailed to multiple sites or publicly posted without the copyright holder(s)' express written permission. Any use, decompiling, reproduction, or distribution of this journal in excess of fair use provisions may be a violation of copyright law.

This journal is made available to you through the ATLAS collection with permission from the copyright holder(s). The copyright holder for an entire issue of a journal typically is the journal owner, who also may own the copyright in each article. However, for certain articles, the author of the article may maintain the copyright in the article. Please contact the copyright holder(s) to request permission to use an article or specific work for any use not covered by the fair use provisions of the copyright laws or covered by your respective ATLAS subscriber agreement. For information regarding the copyright holder(s), please refer to the copyright information in the journal, if available, or contact ATLA to request contact information for the copyright holder(s).

About ATLAS:

The ATLA Serials (ATLAS®) collection contains electronic versions of previously published religion and theology journals reproduced with permission. The ATLAS collection is owned and managed by the American Theological Library Association (ATLA) and received initial funding from Lilly Endowment Inc.

The design and final form of this electronic document is the property of the American Theological Library Association.