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Rituals as Media:
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Jutta Jokiranta

1. Introduction

According to the famous slogan the "medium is the message," coined by Marshall McLuhan, the message cannot be understood separately from the medium that delivers it, and the medium itself has consequences that are not obvious in the contents of the message.[1] From this perspective, *rituals* call for special treatment. If media are understood as forms of communication to store and deliver information, rituals can be explored as an important media that are often found at the crossroads of oral and written practices and include learned embodied practices.[2] This is a comparative enterprise to see what is special about this medium and to explore how the medium (and its technology), not just the information, has an effect—often slowly, implicitly, and structurally—on societal practices, norms, and values, and what the unintended consequences of the medium might be.

The history of rituals is as long as the history of humankind, and thus this technology of communication is quite old. Yet among media studies, rituals have had a mixed position: they are central to the ways in which commemorative practices transmit and construct collective memory and rehearse the master narratives of a community, but often they are not addressed as a medium in their own right.[3]

Recently, ritual studies have been revived, but with some new questions. In today's secular societies, scholars ask: Why do rituals persist?;[4] Why do people engage in obscure activities where the cause-and-consequence patterns repel normal logic and continue to invest time and resources in them?; What good are rituals? Behind the attempt to explain ritual behavior in the modern world is a more profound attempt to identify the role of religion in human evolution. Rituals are one example of coordinated action that supposedly played a role in the selective advantages of human ancestors and enabled the formation of larger groups than immediate kin and the emergence of more complex cognitive abilities that require nurture to develop.[5]

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[1] Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964). Following in the footsteps of McLuhan, it is important to look beyond the obvious, into the non-obvious effects that the new forms of media enable, encourage, or accelerate. "This is merely to say that the personal and social consequences of any medium—that is, of any extension of ourselves—result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" (7).

[2] Günther Thomas, "Communication," in *Theorizing Rituals: Issues, Topics, Approaches, Concepts*, ed. Jens Kreinath, Jan Snoek, and Michael Stausberg (Leiden: Brill, 2008), 321–43, outlines five ways in which rituals and communication can be viewed together, mainly from an analytical perspective: (1) rituals contain verbal communication, (2) rituals are communication via symbols, (3) rituals have hidden grammars that communicate structural categories, (4) rituals are action without meaning, and (5) any communication system can have ritual aspects in it. He then proceeds to seek a sixth, multidimensional approach. I will touch upon at least 1–4 of these links, but will organize my analysis differently, from the perspective of cognition.

[3] Especially the work of Maurice Halbwachs and Jan Assmann on collective memory and cultural memory have touched upon rituals from this perspective; see, e.g., Tom Thatcher, Chris Keith, Raymond F. Person, Jr., and Elise R. Stern, eds., *The Dictionary of the Bible and Ancient Media* (London: Bloomsbury T&T Clark, 2017), 60, 70.

[4] E.g., Robert N. McCauley, *Why Religion Is Natural and Science Is Not* (Oxford: Oxford University Press, 2011).

[5] E.g., Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict* (Princeton, NJ: Princeton University Press, 2013). This is not to take a stance in the debate over whether religion had an adaptionist function in human evolution or whether it is a by-product of other evolutionary traits. For a critique of the fact that evolutionary questions are often by-passed, see Radek Kundt, "Making Evolutionary Science of Religion an Integral Part of Cognitive Science of Religion," in *Evolution, Cognition, and the History of Religion: A New Synthesis. Festschrift in Honour of Armin W. Geertz*, ed. Anders Klostergaard Petersen, Ingvild Sælid

Another central focus arises from theories that aim to overcome the dominant body-mind dualism. The human mind is not a disembodied thing—although it is very natural to think so. We tend to assume that we can perceive, reason, and imagine without our bodies, but this is merely an illusion. All human conceptual thinking is deeply embedded in our being corporeal organisms and in interaction with our environment. Starting from the fact that we discover ourselves through movement, there is no human self without relations to other humans, and all propositional thinking ("higher" operations) is grounded in structures and dimensions of the body ("lower" operations).[6] Ritual actions are no different from ordinary actions in that they employ the human body as the instrument; yet, they do have some special features that make them especially interesting from the point of view of human cognition and communication.

Here, media studies have long understood that humans are more than their individual bodies and brains. Media are extensions of the human, but so too is the human a product of technology. In the field of the cognitive science of religion, such investigation could be phrased in terms of bio-cultural evolution: how human capacities direct and modify forms of culture and how cultures in turn shape human cognition and practices.[7] Technology is not an independent vehicle, but rather something that enables humans to shape themselves. Human agency is relational and embedded in its environment.

In this essay, I will seek ways in which approaching rituals as media might offer a framework for study rather than attempt an overall analysis of relevant (Qumran) texts. When *texts* are addressed, our immediate concern is restricted to how we can study rituals as (historical) practices. We risk studying merely their narrow literary representations or the scrolls as a medium of thin ritual description. Surely, much of ritual praxis remains unknown to us and is unmediated via textual means. Even if we were certain that the words in the scrolls were exactly the ones recited in rituals, ritual experiences include so much more context-dependent and bodily information that the remaining reconstruction would be very shallow. On the other hand, ritual theorists have long noted that even the anthropological and ethnographic observation of rituals does not provide direct access into the practices; anthropological work is in some respects analogous to the interpretation of texts.[8] The medium, whether the ritual practice as practice (including engagement with texts or not) or the text itself, in any case, is not reflecting the "real" world so much as it *is* the real world where information about social relations, the cosmos, and God are established and transmitted.[9]

2. What (Obvious) Information is Mediated in Rituals?

Rituals are of many types and so is the information mediated through them. To start with, I will roughly divide the types of information mediated through rituals into four categories: factual, normative, meta-, and motivational information. The next section will focus on ritual as multimedia events (both verbal and nonverbal) and the ways in which this information is delivered.

Gilhus, Luther H. Martin, Jeppe Sinding Jensen, and Jesper Sørensen (Leiden: Brill, 2019), 141–58. Note that cooperation is not a purely positive phenomenon; theorists recognize its destructive potential (as in warfare) or negative side (exclusion of outsiders), too.

[6] Mark Johnson, *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago: The University of Chicago Press, 2007). Our bodies are designed to hide their functions so that when we see, we are not aware of our seeing but only of the target of the seeing, whereas when we experience, we do not feel the operations of the organs but only the resulting feeling. Thus, we have an illusion of an independent mind sensing and having ideas *of* the body but not *through* the body.

[7] See Armin Geertz, "Brain, Body and Culture: A Biocultural Theory of Religion," *MTSR* 22 (2010): 304–21. Cognition is not approached as distinct operations of the brain; it is extended, embedded, enactive, and embodied—thus, human culture could be seen as extensive extended cognition.

[8] See Catherine Bell, *Ritual: Perspectives and Dimensions* (Oxford: Oxford University Press, 1997), 67.

[9] See Richard Cavell, *Remediating McLuhan* (Amsterdam: Amsterdam University Press, 2016), 21.

Factual information is basic information about *who* and *what*. In life-cycle rituals, for example, it has to do with who is born, transformed, or has died. Judean purity practices deliver information on childbirths, cures from diseases, male and female sexual conditions, and deaths. Different vows and promises deliver information about human needs and wishes—and they tell us who is sick and in need of help. Factual information includes basic facts about time, such as when the Sabbath begins and when the annual festivals take place. It may also include secondary information, such as how good the harvest was during a seasonal festival.

Factual information could be delivered via other media, simply by mouth-to-mouth communication or via verbal announcements. Rituals do more and are meant to do more. They are organized to deliver *normative information*: norms, values, and beliefs. These include all kinds of communication about God, human beings, and the cosmos. Thus, sacrificial practices transmit, at least in some views, knowledge about the desired order of things in the created cosmos;[10] purity practices signal the boundaries of sacred space and time; festival traditions transmit memories of Israel's history and God's acts for his people; the Sabbath observance transmits, for example, belief in the proper cyclic order of the cosmos: God rested, so humans should rest and let others rest. Transmitted knowledge is always contextual, and no single theory on the meaning of a ritual practice can be presented. This normative and mythic aspect of rituals often points towards the *symbolic* meanings *behind* ritual actions, and it causes participants and observers to seek out the underlying meanings of each action, actor, or object.[11] Often ritual experts are harnessed to give the correct interpretations.

Meta-information is information that may not be explicit or primary in the ritual itself but is derived at a meta level. Meta-information includes knowledge about the statuses, hierarchies, and relations between people: for example, who is the religious expert from whom to seek help, what counts as work (Sabbath), when is a wife's fertile period of the month (ritual purity), or who is a trustworthy member of the community? Significant meta-information for a community is communicated via this last type of *identity* information: who belongs—who is an insider and who is an outsider—and who participates in the rituals and who does not: who is a pious, healthy, or wealthy member of the community.[12] In the words of George Brooke, "liturgy defines in a particular way and with particular words the community that prays and praises."[13] Ritual participation controls change and the accepted identity expression; it contributes directly to information about selfhood. As such, rituals impose and enforce *social order* by negotiating and legitimizing social distinctions.[14]

Yet a further aspect of rituals has to do with the urge and compulsory feeling of an individual to engage in ritualized activities. Efficacious rituals are meant to accomplish and change something, not just to deliver symbolic messages. I call this *motivational information*: why does the ritual matter, what does it do, and why is it dangerous to overlook it? Supernatural agents have a role in many rituals; rituals are not just a human endeavor. Ritual theories also suggest that if only the symbolic, the meaning side mattered in rituals, participants would become tired. Rituals need the efficacy side, the notion that something really changes, to motivate participation. Rituals do not convey a message, but rather they are the language itself

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[10] Jonathan Klawans, *Purity, Sacrifice, and the Temple: Symbolism and Supersessionism in the Study of Ancient Judaism* (Oxford: Oxford University Press, 2005).

[11] See Bell, *Ritual*, 33–46, for a structuralist attempt to find the hidden grammar behind the obvious social systems.

[12] Ray A. Rappaport, *Ritual and Religion in the Making of Humanity* (Cambridge: Cambridge University Press, 1999), speaks of the self-referential, indexical messages (as opposed to canonical messages) that ritual behavior sends.

[13] George J. Brooke, "Aspects of the Theological Significance of Prayer and Worship in the Qumran Scrolls," in *Prayer and Poetry in the Dead Sea Scrolls and Related Literature*, ed. Jeremy Penner, Ken M. Penner, and Cecilia Wassen, STDJ 98 (Leiden: Brill, 2012), 39.

[14] See Bell, *Ritual*, 23–29, for a functionalist attempt to reveal the social function of rituals.

through which things are done.[15] This motivational information may precede the practice itself: one's own emotions or urges communicate to oneself the need to engage in action and the possibility of the ritual to respond to those emotions.

The Qumran movement not only maintained and modified existing ritual practices but developed its own ritual practices. It had *more* or *other information* to mediate than what could be delivered through existing practices. Ritual practices were needed to mediate identities, and not only at the factual and normative level but also at the meta- and motivational levels, providing an understanding of one's role in relation to that of the elite knowing ones. How do the rituals transmit this knowledge? What are the mechanisms?

3. How is Information Mediated in Rituals?

Rituals are a special kind of activity that can be distinguished from the mundane by their repetition, their frequency, and also their goal demotion:[16] they achieve something by a logic that is not obvious to an outside observer. Rituals are not only organized to mediate some explicit teachings or traditions (symbolic information),[17] they also convey information that is needed for the coordination of collective action, identity formation, bodily experience, motivation and emotions, even wellbeing. Recently, Risto Uro has discussed rituals and religious knowledge from three cognitive perspectives in the study of Early Christianity.[18] I base my discussion below on his outline to explore three ways in which rituals mediate information and are in turn mediated by it:

- rituals mediate shared (common) knowledge
- rituals mediate (grounded) embodied and memorable knowledge
- extended (embedded, situated) knowledge mediates rituals

3.1 Rituals Mediate Shared Knowledge

First, (collective) rituals generate common (shared) knowledge. According to Michael Chwe, "public ceremonies are powerful not simply because they transmit meaning from a central source to each audience member but because they let audience members know what other members know."[19] This common knowledge makes it possible for people to coordinate action, as they trust that the others know the same things and they want to participate only if the others also participate.

One obvious Qumran case for a novel collective ritual where such shared information is created was the annual covenant renewal, in which members were also ranked:

> They shall do as follows annually, all the days of Belial's dominion: the priests shall pass in review first, ranked according to their spiritual excellence, one after another. Then the Levites shall follow, and third

[15] E.g., Robert N. McCauley and E. Thomas Lawson, *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms* (Cambridge: Cambridge University Press, 2002); Harvey Whitehouse, *Modes of Religiosity: A Cognitive Theory of Religious Transmission* (Walnut Creek, CA: AltaMira Press, 2004).

[16] Rappaport, *Ritual and Religion in the Making of Humanity*.

[17] In their role of mediating symbolic information and abstract ideas, rituals can be compared to other means of learning existing knowledge, such as education. If the purpose is to transmit information about Israel's history, one can study a scroll or hear it read and explained. Deep learning comes through hearing something dozens of times and by doing it oneself. Institutionalized education naturally employs many similar techniques as collective rituals. Yet, this aspect covers only part of what rituals do.

[18] Risto Uro, *Ritual and Christian Beginnings: A Socio-Cognitive Analysis* (Oxford: Oxford University Press, 2016), 154–77. For studying early Christian baptism, Uro outlines three cognitive approaches to ritual knowledge as "rituals generate embodied knowledge;" "rituals generate common (shared) knowledge;" "rituals accommodate extended knowledge."

[19] Michael Suk-Young Chwe, *Rational Ritual: Culture, Coordination and Common Knowledge* (Princeton: Princeton University Press, 2003), abstract.

> all the people by rank, one after another, in their thousands and hundreds and fifties and tens. Thus shall each Israelite know his proper standing in the *Yahad* of God, an eternal society. None shall be demoted from his appointed place, none promoted beyond his foreordained rank. (1QS 2:19–23)[20]

Knowing who was part of the covenant was important knowledge for people who normally—probably—lived spread out across the land. It was necessary to know what rank one had, to know who the novices were, and to know that everyone else knew so that the members could continue to strive for perfection in their everyday life. This has at least three aspects to it. First, had one relied only on small-group gatherings and a few superiors who could supervise the members' conduct, it would have been easier to defect and leave the group—even such an expression of disapproval would then be known only to a small circle of people. When a member knew that their position was annually being evaluated, their behavior was a larger issue: it mattered to the whole covenant.

Secondly, one knew whom to trust and whom to follow; those below you in the hierarchy were not the ones likely to help you proceed and improve your position. Thirdly, one knew that others knew: if your position was low, you would need to prove yourself to convince others that you deserve more; if your position was high, you would need to convince others that you deserved such a position. If you received an invitation to the covenant ceremony without knowing who else was going, would you go? Each person's motivation to participate increases the more they know that the others are participating. Just knowing the message (e.g., that God has formed a new/renewed covenant to which one can join) is not enough; some messages need the metaknowledge of others knowing what you know.[21]

Human groups also have other problems to solve that extend beyond the coordination problem (should I participate—are others participating?). One is the "free-rider" problem: why should I invest in this group if I could get the benefits in any case? Rituals may increase the level of trust and cooperation among those who signal their commitment through "costly signals," and thus make these groups more sustainable. By participating in time-consuming and arduous, stressful, or concretely costly rituals, members may tell others that they are committed, trustworthy members.[22]

We must remember, however, that the text for the covenant renewal as it is represented in the Community Rule Scroll 1QS does not mediate the ritual to us nor to its users: some words and structure of actions are given, but not others. Is this intentional? The confession of sins is rather pronounced in 1QS since such collective confession is found quoted only here and in the Damascus Document (CD 20:28–30) and is not a typical discourse found in the rules elsewhere. It thus has a specific place within the covenant entry, since those who *know to confess* are those who receive the blessing. Prior to this, the priests are said to rehearse God's great deeds and the Levites are said to pronounce Israel's wicked deeds, but these words are not given. One can easily imagine a traditional view of history provided here: both salvation history and a history of breaking the covenant. This particular scribal representation left room for creative oral uses of history by not fixing it in traditional terms. Perhaps space was opened for a retelling of the cosmic history, as presented in columns 1QS 3–4, in the form of the discourse on two spirits.

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[20] Unless otherwise noted, the translations of the scrolls follow Emanuel Tov, ed., *The Dead Sea Scrolls Electronic Library: Texts and Images.* Partially based on *The Dead Sea Scrolls Reader*, edited by Donald W. Parry and Emanuel Tov, morphological analysis by Martin Abegg, Jr., produced by Noel B. Reynolds, associate producer Kristian Heal (Leiden, Brill, 2006).

[21] Chwe, *Rational Ritual*, 8–12.

[22] J. A. Bulbulia and Richard Sosis, "Signalling Theory and the Evolution of Religious Cooperation," *Religion* 41 (2011): 363–88; see also Richard Sosis, "Do Religions Promote Cooperation? Testing Signaling Theories of Religion," in *The Cognitive Science of Religion: A Methodological Introduction to Key Empirical Studies*, ed. D. Jason Slone and William W. McCorkle Jr. (London: Bloomsbury, 2019), 155–62, and the literature therein.

Nevertheless, we should not overestimate the information that was shared among the covenanters. Each Serekh ha-Yahad (S) manuscript presents a certain type of "user platform."[23] Here, 1QS is an anomaly with its long discourse on the two spirits and information about a divine plan and determination.[24] Some information in the discourse—that God has not only set two opposing powers to have dominion over the world, but has also determined the spirits of truth and injustice by which *each individual* walks (1QS 3:17–18; 4:23c–26)—is rare and may *not* have been common knowledge in the movement.[25] Consider this information:

> According to the inheritance of a person in truth he acts with righteousness and thus detests injustice and according to his allocation in the lot of injustice he acts wickedly because of it and thus loathes truth. For God has put them in place in equal measure until the agreed end and the renewal. And He knows the actions of their deeds for all periods of [eterni]ty and He has given them as an inheritance to the children of humanity so that they may know good [and evil and He deter]mines the fate for all the living according to the spirit of each person [ ] visitation. (1QS 4:24–26)[26]

Imagine that this piece of information was e-mailed to the covenant members using the "bcc" (blind carbon copy) function of email: you would now know this information but you would not know who else knew.[27] How would you react? The fellows whom you thought were on your side might actually turn out to be working on the side of evil. But they might not know that you were aware of this possibility, and you might not want to raise this accusation against them. Cooperation and trust would be severely risked. On the other hand, if this information was shared, for example in the covenant ritual, then everyone would know that others knew that you might be compromised in your spirit—and thus the motivation to participate and be among the ones who *know* to confess their sins and supervise their behavior would increase.[28]

No-one can be sure that all knowledge in a public ritual becomes shared knowledge, but rituals have tools to facilitate that this is so. Rituals often use formalized language and thus already limit the choice of words and expressions.[29] In the covenant renewal, the formality of the confession, blessings and curses, and the "amen" responses ensure that they remain "pure" in their genre, no-one freely adds other elements, and thus, there are restrictions on the flexibility of the information. Ritual does not require faith, merely participation.

Repetition marks things as common knowledge. According to Michael Chwe, "in terms of common knowledge generation, when a person hears something repeated, not only does she get the message, she knows it is repeated and hence knows that it is more likely that others have heard it."[30] For example, in another section of 1QS, in the midst of rules and strict hierarchies according to which one needs to submit to superiors, the repetition of the term

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[23] Jutta Jokiranta, "What is 'Serekh ha-Yahad (S)'? Thinking About Ancient Manuscripts as Information Processing," in *Sibyls, Scriptures, and Scrolls: John Collins at Seventy*, ed. Joel Baden, Hindy Najman, and Eibert Tigchelaar, JSJS 175 (Leiden: Brill, 2016), 1:611–35.

[24] Charlotte Hempel, "The Long Text of the Serekh as Crisis Literature," *RevQ* 27 (2015): 3–24.

[25] For a suggestion of textual development within the discourse, see Meike Christian, "The Literary Development of the 'Treatise of the Two Spirits' as Dependent on Instruction and the Hodayot," in *Law, Literature, and Society in Legal Texts from Qumran: Papers from the Ninth Meeting of the International Organization for Qumran Studies, Leuven 2016*, ed. Jutta Jokiranta and Molly M. Zahn, STDJ 128 (Leiden: Brill, 2019), 153–84.

[26] Translation by Charlotte Hempel, *The Community Rules from Qumran: A Commentary*, TSAJ 183 (Tübingen: Mohr Siebeck, 2020). I thank Prof. Hempel for sharing the work with me prior to publication.

[27] See Chwe, *Rational Ritual*, 14.

[28] Peter Porzig, "The Place of the 'Treatise of the Two Spirits' (1QS 3:13–4:26) within the Literary Development of the Community Rule," in *Law, Literature, and Society in Legal Texts from Qumran*, 127–52, makes the connection between the idea of "being a sinner and righteous at the same time" in the Discourse of the Two Spirits and the final hymn in 1QS 10–11.

[29] Thomas, "Communication," 332–35.

[30] Chwe, *Rational Ritual*, 4, also 27–30.

מתנדבים, "those who volunteer" (six times in 1QS 5:1–22), underlines the fact that one has freely joined the movement and one knows others know this, even though one's reality may be full of commitments and restrictions emanating from above.

Furthermore, the movement did not rely on annual meetings only, but also on repetitive, frequent, small-group meetings. Not only prayer, but education and the study of texts became ritualized.[31] The mention of collective assemblies in 1QS 6:2–3, "they shall eat, pray and deliberate communally," could be understood as a completely oral activity. Later in the same passage (1QS 6:6–8), we hear about the continuous study of the *torah* in every group of ten, as well as the nightly reading of the "document" (ספר) by the *rabbim*.[32] As suggested by Charlotte Hempel, praying and the nightly reading can be associated with apotropaic practices to safeguard members from demonic threats during the nighttime or time of testing.[33] However, these sentences are one of a few indications of how frequently the members met ("day and night," "for the first of every night of the year"), and it is doubtful whether we can take them at face value and believe that all people could afford to make such a daily investment.[34] In any case, the work of William Johnson is relevant: "When one asks why literature is so important within these communities, the answer in part must be circular: these communities construct themselves as exclusive domains on the basis of their knowledge of, and facility with, literary texts."[35] If we envision that all ten persons or else one person at a time are *able to study the torah* (1QS 6:6–7), this would then set them apart from the illiterate majority and be a huge achievement.[36] Thus, the passage tells us a lot about the ideal construction of the reading and studying of the text: it is continuous (cf. Josh 1:8; Deut 6:6–9), systematic, and structured; it takes place collectively and engages all present; it occupies a great deal of time. Furthermore, this community could afford it and they had the necessary skills and resources for it. They were both open and concealed about their knowledge: it was shared among the participants but concealed from others.[37]

Michael Chwe also explains how coordination becomes an issue in collective action, such as rebelling against the regime. If you believe others will submit to the leading authority, you are more likely to do the same, but if you believe most others will rebel, you are more likely to join in the rebellion.[38] This is an interesting aspect if we think of the Qumran movement as a subversive movement to the Hasmonean regime that, while it did not openly revolt, created

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[31] On the kind of experience that would most likely be aroused by the reading, see Angela Kim Harkins, "The Emotional Re-Experiencing of the Hortatory Narratives Found in the Admonition of the Damascus Document," *DSD* 22 (2015): 285–307.

[32] For the three activities, see George J. Brooke, "Reading, Searching and Blessing: A Functional Approach to Scriptural Interpretation in the יחד," in *The Temple in Text and Tradition: A Festschrift in Honour of Robert Hayward*, ed. R. Timothy McLay, LSTS 83 (London: Bloomsbury, 2015), 143 n. 10.

[33] Hempel, *Community Rules.*

[34] See Hempel, *Community Rules*, and idem, *The Qumran Rule Texts in Context: Collected Studies* (Tübingen, Mohr Siebeck, 2013), 79–105, for a discussion on how various types of gatherings are put together in this material. Note also that 1QS 6:6–7a is not preserved in any of the Cave 4 S manuscripts.

[35] William A. Johnson, *Readers and Reading Culture in the High Roman Empire: A Study of Elite Communities*, Classical Culture and Society (Oxford: Oxford University Press, 2010), 203. See also Mladen Popović, "Reading, Writing, and Memorizing Together: Reading Culture in Ancient Judaism and the Dead Sea Scrolls in a Mediterranean Context," *DSD* 24 (2017): 447–70.

[36] Not everyone was literate in such a community; see Hempel, *Community* Rules, 69. Compare Roman reading practises by William A. Johnson, "Constructing Elite Reading Communities in the High Empire," in *Ancient Literacies: The Culture of Reading in Greece and Rome*, ed. Holt N. Parker and William A. Johnson (Oxford: Oxford University Press, 2009), 320–30.

[37] For more on such a "knowledge economy," see Charlotte Hempel, "Bildung und Wissenswirtschaft im Judentum zur Zeit des Zweiten Tempels," in *Was ist Bildung in der Vormoderne?* ed. Peter Gemeinhardt, Studies in Education and Religion in Ancient and Pre-Modern History in the Mediterranean and Its Environs 4 (Tübingen: Mohr Siebeck, 2020), 229–44.

[38] Chwe, *Rational Ritual*, 11, 19–25.

a network to offer alternative ways to promote one's position, an alternative system of education, and a quasi-military structure.[39] A sufficient number of people needed to have shared knowledge (know that others were going to participate) in order to create and maintain a sustainable network. Chwe also explains how, by establishing their own weights, measures, and calendar, the French revolution solved the other coordination problem, that of getting people to signal shared knowledge about the new government:

> A person might not know the extent to which other people support a new regime but would know that others consented at least to using its new weights and measures… Changing weights, measures, and the calendar is particularly effective not simply because they change the way that a given individual thinks about the revolution or the physical world, but because they change how individuals interact with each other; they change what an individual knows about other individuals.[40]

The calendar example brings forward a tempting idea regarding the role of the 364-day calendar in the Qumran movement. Could the calendar or some other institution or legal innovation have been a way of enhancing shared knowledge in the case of the Qumran movement? Creating a new symbol for the new association is not enough; the symbol must enjoy sufficient agreement and become common knowledge. However, we must not draw hasty conclusions, as we do not know which halakhic practices were strictly unique to the Qumran movement, and the calendar most probably was not an innovation made by the movement.[41] The possibility that some purity or Sabbath practices, for example, may have functioned as such signals could be further explored. Sabbath rules are a unique form of ritual practice since they *ban* activities rather than command them. Such rules have a strong potential to convey identity information: the more the people follow specific rules (of what is prohibited) and allow for less individual choice, the more those people come to be associated with a certain circle or movement of people. What one does *not* do can be more of a powerful message than what one does, since adding ritual actions is often easier than taking them away. However, in order to be an effective means to mark coordinated action and draw group boundaries, the banned activities must somehow *play a symbolic role and be significant and observable in the socio-cultural environment*. Thus, things related to the starting time of the Sabbath, maximum distances of movement, a ban on work done in public (e.g., business, court, agriculture), and proper clothing would work as publicly observable actions, whereas restrictions in cooking, baby-sitting, and carrying things within the household would not (see CD 10–11).[42]

Furthermore, whereas weak ties (contacts with acquaintances, friends' friends) are important for spreading new information across distinct networks, they are not always sufficient for adopting new, risky, costly, or controversial information. Such information or practices may require further reinforcement—by having close friends or a great number of people adopt the information, or by being acquainted with the new information through several channels.[43] The secrecy and exclusive gatherings may have decelerated the outsiders' (or other

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[39] See Jutta Jokiranta, "Competitors to Middle Maccabees: Evidence from the Dead Sea Scrolls," in *The Middle Maccabees: Archaeology, History, and the Rise of the Hasmonean Kingdom*, ed. Andrea M. Berlin and Paul J. Kosmin, Archaeology and Biblical Studies Series (Atlanta: SBL Press, 2021), 363–78.

[40] Chwe, *Rational Ritual*, 27. Furthermore, the role of strong and weak links is related to the spread of information. Strong-link networks are ones where everyone knows each other and tend to be friends; there, knowledge is likely to become shared. Weak-link networks include a person's friends' friends, who tend not to be the person's friends; weak links may be more effective at spreading information to a larger group of people, Chwe, *Rational Ritual*, 6, 61–66. See further below.

[41] E.g., Vered Noam, "Stringency in Qumran: A Reassessment," *JSJ* 40 (2009): 342–55.

[42] See Lutz Doering, *Schabbat: Sabbathalacha und -praxis im antiken Judentum und Urchristentum*, TSAJ 78 (Tübingen: Mohr Siebeck, 1999).

[43] Damon Centola and Michael Macy, "Complex Contagions and the Weakness of Long Ties," *American Journal of Sociology* 113 (2007): 702–34. Simple contagion takes place when one contact is enough to cause the

inside-groups') knowledge of the Qumran movement's beliefs and practices; yet the members' everyday practices had the potential to spread to new clusters of people if the "bridge" was wide enough (e.g., several people around you started to exhibit a certain behavior).

3.2 Rituals Mediate Embodied Knowledge

Following recent work that abolishes mind-body and inner-outer dualisms, we may say that *any* cognition is embodied cognition. We do not have inner mental states that represent the outer world to us, but rather our bodies engage in organism-environment coordination in ways that allow us to function purposefully in changing (physical, social, and cultural) environments. Cognition and meaning-making require brains, bodies, and interaction with the environment.[44] The sensorimotor system that allows interaction with the environment is multimodal: the input from one sensory area (such as *seeing* an object) often activates other areas too (such as the potentiality to *grasp* things that are seen, their tactile features), and one piece of modal information is continuously being connected with others in the brain.[45] Further, neural patterns may be similar in the actual event and in the later recollection or representation of the event. According to the theory of grounded cognition, "the brain areas that represent an entity or event in actual experience also represent it conceptually in its absence."[46] When a person is exposed to food cues, for example, the same brain networks are activated as when consuming food.

What significance does this have for understanding rituals? Rituals are just one environment and setting, but they engage bodies and senses in a governed manner, and understanding cognition as embodied helps us to understand various aspects of rituals as media.

First, while the previous section was about shared knowledge between people, another important aspect of ritualized actions is that they convey information *to the body itself*. Especially in a state of anxiety when people face uncontrollable or unnamable threats, they may resort to repetitive, rigid, seemingly meaningless actions to gain a sense of control over the situation.[47] To take an example from ethnographic research that has sought to investigate this mechanism: Richard Sosis interviewed the residents of a Northern Israelite village during the Second Intifada and found that women who reported intensive recitation of psalms showed lower levels of anxiety and were more likely to continue with their normal lives than women who did not recite psalms.[48] In a stressful setting where things are unpredictable, a sense of doing something is better than doing nothing. Moreover, doing something repetitiously is better than doing something once or randomly.

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new party to adopt the piece of information or practice, and complex contagion takes place when the new party requires several contacts or several exposures to the same information before adopting it.

[44] Johnson, *The Meaning of the Body*, esp. 113–34.

[45] Johnson, *The Meaning of the Body*, 160–62, notes that understanding is a form of simulation.

[46] Jing Chen, Esther K. Papies, and Lawrence W. Barsalou. "A Core Eating Network and Its Modulations Underlie Diverse Eating Phenomena," *Brain and Cognition* 110 (2016): 24. See also Lawrence W. Barsalou, "Grounded Cognition," *Annual Review of Psychology* 59.1 (2008): 617–45.

[47] Pascal Boyer and Pierre Liénard, "Why Ritualized Behavior? Precaution Systems and Action Parsing in Developmental, Pathological and Cultural Rituals," *Behavioral and Brain Sciences* 29 (2006): 595–613, explain the psychological mechanism involved in this behavior, which is related to the mechanism in OCD (obsessive compulsory disorder), but which also occurs in childhood and life crises. See also Martin Lang, Jan Krátký, John Shaver, Danijela Jerotijević, and Dimitry Xygalatas, "Is Ritual Behavior a Response to Anxiety?" in *The Cognitive Science of Religion: A Methodological Introduction to Key Empirical Studies*, ed. D. Jason Slone and William W. McCorkle Jr. (London: Bloomsbury, 2019), 181–91.

[48] See Richard Sosis, "Can Rituals Reduce Stress during War? The Magic of Psalms," in *The Cognitive Science of Religion: A Methodological Introduction to Key Empirical Studies*, ed. D. Jason Slone and William W. McCorkle Jr. (London: Bloomsbury, 2019), 193–202. Sosis concentrated on women, since Jewish males normally participate in many ritual activities.

Turning to evidence from the Qumran movement, we may ask: Was there a heightened sense of threat? If so, could the many psalm texts or exorcist texts or other ritual activities be used to relieve it? To answer the first question, this naturally varied from individual to individual. Most people experience some occasions of uncontrollable threat during their lifetime (illness or the threat of violence); there was much unrest during the time of the Qumran movement's existence. But the heightened sense of threat was also created within the movement via its ideology regarding the periodization of time: they were witnessing the time of Belial, a time of testing (e.g., 1QS 1:17–18; 3:12–4:26). Fear is a powerful tool and can be used to motivate people to modify their behavior in a certain way. The direction they took may indeed have involved prayers and psalms but also the ritualized study of texts and careful observance of purity, as discussed above. Songs of the Sabbath Sacrifice (4Q400–407) are often referred to as good candidates for transcendental experience, but their repetitive, formulaic language (esp. songs 6–8) may also be considered suitable for meditative recitation to relieve stress.[49] I have elsewhere looked at the Qumran Berakhot (4Q286) from a similar perspective: detailed lists are optimal for occupying one's attention.[50] Several texts in the Qumran corpus are meant to ward off evil (e.g., 11QApocryphal Psalms [11Q11], Songs of the Sage [4Q510–511]).[51] But in theory, any psalms deemed protective could have been used for similar purposes, and also in private. Moreover, texts in the *tefillin* and the praxis of *wearing texts*, including the divine name, in material form had a significant role in this respect.[52] One may also wonder if the detailed halakhic study, the results of which are seen in numerous scrolls from Qumran, could address a similar need to focus attention on doing.

Secondly, whereas in ritualized recitation it may not matter if one understands the words of the psalms or not, in other respects rituals may seek to engage the imagination and capture tangible experiences. Again, we are restricted to the textual evidence, but one thing to note is just how common concrete images are in texts that probably were used in ritual settings. Examples are numerous. Consider this brief example from the Songs of the Sage (4Q510–511), which are praises to God in order to gain protection from evil spirits (4Q510 1 4–8):

> [Sing for joy, O righteous ones,] *vacat?* for the God of Wonder.
> The psalms of his glory are for the upright.
> [And let] all those who are blameless exalt Him! *vacat*
> With the lyre of salvation they [shall ope]n their mouths for God's compassion.
> They shall seek His manna.
> (4Q511 10 7–9)

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[49] The difficulty is that we do not know if they were recited all year round or only for the first quarter of the year. For more on mysticism, see Annette Evans, "Songs of the Sabbath Sacrifice, Song Thirteen: Ambiguity, Mysticism, and Cognitive Neuroscience," *JSem* 28 (2019): 1–17.

[50] Jutta Jokiranta, "Ritualization and Power of Listing in 4QBerakhot[a] (4Q286)," in *Is There a Text in this Cave?: Studies in the Textuality of the Dead Sea Scrolls in Honour of George J. Brooke*, ed. Ariel Feldman, Maria Cioată and Charlotte Hempel, STDJ 119 (Leiden: Brill, 2017), 438–58.

[51] See, e.g., Esther Eshel, "Apotropaic Prayers in the Second Temple Period," in *Liturgical Perspectives: Prayer and Poetry in the Light of the Dead Sea Scrolls: Proceedings of the Fifth International Symposium of the Orion Center for the Study of the Dead Sea Scrolls and Associated Literature, 19-23 January 2000*, ed. Esther G. Chazon, STDJ 48 (Leiden: Brill, 2003), 69–88; Mika Pajunen, "How to Expel a Demon: Form- and Tradition-Critical Assessment of the Ritual of Exorcism in 11Qapocryphal Psalms," in *Crossing Imaginary Boundaries: The Dead Sea Scrolls in the Context of Second Temple Judaism*, ed. Mika S. Pajunen and Hanna Tervanotko, Publications of the Finnish Exegetical Society 108 (Helsinki: Finnish Exegetical Society, 2015), 128–61.

[52] Yehudah Cohn, *Tangled Up in Text: Tefillin and the Ancient World*, BJS 351 (Providence, RI: Brown Judaic Studies, 2008), argues that the practice was an innovation during the Second Temple period, inspired by magical amulets of the Greeks and associated with the length of days in the land (Deut 11:21). For more Qumran evidence, see Yonatan Adler, "The Distribution of Tefillin Finds among the Judean Desert Caves," in *The Caves of Qumran: Proceedings of the International Conference, Lugano* 2014, ed. Marcello Fidanzio, STDJ 118 (Leiden: Brill, 2016), 161–73.

The context in which these songs were used had primed the hearers to be aware of (unseen) dangers and threats; the preceding text paints the picture of the "present dominion of wickedness" (4Q511 10 3). The quoted text exhorts the righteous to join in the praises (which ward off evil), and thus "seek His manna." This raises the question: Which is more important for the understanding of this phrase, to connect manna to the miraculous food provided during the desert wondering of the Israelites (Exodus 16), or to understand that manna is some sort of (positively valued) eatable substance? The manna is primed here by the preceding phrase: "They shall open their mouths for God's compassion." In seeking to understand the text, I claim that the primary level comes from being able to intuitively connect manna to food cues that activate one's neural networks with respect to food and eating. The secondary levels of understanding come via activating memories and knowledge of wilderness traditions—these are the intertextual links we as scholars are so keen on identifying. In doing so, we may miss how the texts work at a primary, bodily level and how they might work for hearers and participants without the same cultural knowledge. All vocabulary connected to the senses influence the experience, accessibility, and attractiveness of the ritual. The more such elements are present, the easier it is for the participant to use basic mundane knowledge to process and anticipate the information.[53]

Thirdly, we may note the significance of these concrete images and of bodily engagement regardless of whether you participate in the ritual yourself, observe it, or only encounter it in textual form (listening or reading). Let us turn back to the covenant ritual of 1QS, where the priests, the Levites, and the people were said to pass (יעבורו) to the covenant in three turns (Priests, Levites, people), as quoted above (1QS 2:19–23). We have no way of knowing if this sort of action took place annually or how it took place, but if it did, it most probably was a distressing situation for all the groups: the ceremonial procession not only demonstrated the group to which one belonged, but also one's rank within the group. The verb עבר may be understood metaphorically as describing the resulting order of "passing," evidenced, for example, in a written register, but it may also just as easily point to a concrete movement of people, since the text otherwise indicates ceremonial features (such as collective, liturgical words and responses). The solemn setting would likely have caused people to attach special meaning to this movement of bodies: one's cosmic status depends on one's concrete place among other bodies of people. There is also evidence that mere observing may cause similar heart-rate synchrony with those participating in an anxiety-arousing event.[54] But even just the act of *hearing* this text annually, without the actual movement or ceremony, could activate the sensorimotor systems connected to movement, to imagination of the procession of multiple groups, and to the shift from one place to another. Drawing people into the idea of movement and passing across a border had consequences for how the abstract idea of covenant was perceived and understood: when one simulated her/his own position among the ranked, the covenant became yet more concrete and compelling.

Furthermore, bodily states influence cognition and information processing, and ritual experiences may vary accordingly. In a hungry state, people simulate the taste and reward value of foods more than when they are not hungry.[55] In empirical tests, bodily states may be

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[53] Lawrence W. Barsalou, Aron K. Barbey, W. Kyle Simmons, and Ava Santos, "Embodiment in Religious Knowledge," *Journal of Cognition & Culture* 5 (2005): 44, speak about three encoding factors: the subject-performed task (SPT) benefit, the location benefit, and the concreteness benefit.

[54] Dimitris Xygalatas, *The Burning Saints: Cognition and Culture in the Fire-Walking Rituals of the Anastenaria* (Bristol: Equinox, 2012), 182–83, studied the fire-walking ritual in Northern Greek villages, and he measured a similar heart rate among those performing the fire walking and the local spectators who were merely sitting and watching the performance. However, the synchrony did not extend to non-local spectators, who did not share the contextual knowledge and expectations as the local residents.

[55] Chen et al., "A Core Eating Network," 24. People are also more likely to simulate the taste and reward of tasty, unhealthy foods than of less flavorful healthy foods.

induced by, for example, activating certain stereotypes and then investigating how they influence behavior. When in one experiment subjects were primed with the "elderly" concept, they walked more slowly to the elevator.[56] Judith Newman has suggested that the language of prostration in the hymns contributes to the humble making of the wisdom teacher: moving your body or simulating movement contributes to the affective responses in the body.[57]

Fourthly, the fact that conceptual thinking is deeply embedded in bodily postures, conditions, and experiences with the concrete world is also strongly suggested by *conceptual metaphor theory*. Metaphors are embodied in us, and metaphoric thinking is our way of making sense of the world. As George Lakoff and Mark Johnson have shown, humans understand abstract things in terms of concrete things, and there is evidence that the processing of abstract ideas involves the corresponding sensorimotor structures.[58] These structures include image schemas having to do with orientation, amount, or position, for example (such as VERTICALITY, SCALARITY, CONTAINER schemas: UP IS GOOD, MORE IS GOOD, INSIDE-OUTSIDE). Conceptual metaphors make use of bodily experiences (e.g., UNDERSTANDING IS *SEEING*), and these (unconscious) patterns lie behind various linguistic expressions ("I *see* what you mean"). A growing number of studies have analyzed metaphors in biblical materials from this perspective. Let us go back to our first example from the Songs of the Sage:

[רננו צדיקים] *vac?* באלוהי פלא	[Sing for joy, O righteous ones,] *vacat?* for the God of Wonder.
ולישרים תהלי כ[בודו]	The psalms of [his glory] are for the upright.
[י]רוממוהו כול תמימי דרך *vac*	[And let] all those who are blameless exalt Him! *vacat*
בכנור ישׂ[ועות יפת]חו פה לרחמי אל	With the lyre of sal[vation they shall ope]n their mouths for God's compassion.
ידרושו למנו *vacat*	They shall seek His manna. *vacat*
	(4Q511 10 7–9)

The short section includes many types of metaphors. It uses the orientation metaphor RIGHT/STRAIGHT IS GOOD in the expression ישרים, "the upright (people),"[59] and the orientation metaphor UP IS GOOD in the exhortation [י]רוממוהו, "let [them] exalt him" (from the root רום, "be high").[60] The expression תמימי דרך, "the blameless of the way," is a common expression in the scrolls, and it employs the conceptual metaphor LIFE IS A WAY. The expression כנור ישועות, "the lyre of victories," makes use of the fact that lyres are played in victory celebrations and connected to joy (e.g., Neh 12:27; 1 Chr 15:16, 28); yet, here the ישועות does not refer so much to victories but to salvation from danger and help in need: the players of the lyre are not (only)

[56] E.g., Barsalou et al., "Embodiment in Religious Knowledge." However, Doyen et al., "Behavioral Priming," famously addressed problems in priming studies as they were not able to replicate the earlier test.

[57] Judith H. Newman, "Embodied Techniques: The Communal Formation of the Maskil's Self," *DSD* 22 (2015): 249–66. Most of the ways in which such rituals encoded information in bodily movements and postures have been lost to us. One ritual that almost certainly engaged the body was ritual purification. Washing the impurity away by water and immersing the whole body may have felt as concrete as washing away dirt and sweat, although, according to some archaeological assessments, this experience may have not been refreshing, but rather have involved stagnant water in a dark place; see Rick Bonnie, "Bath/Mikveh," in *Brill Encyclopedia of Early Christianity Online*, ed. David G. Hunter, Paul J. J. van Geest, Bert Jan Lietaert Peerbolte (Leiden: Brill, 2019).

[58] George Lakoff and Mark Johnson, *Metaphors We Live by* (Chicago: University of Chicago Press, 2003); Zoltán Kövecses and Réka Benczes. *Metaphor: A Practical Introduction*, 2nd ed. (Oxford: Oxford University Press, 2010); Johnson, *The Meaning of the Body*, 165–206.

[59] This may also be a more complex blend of, for example, the orientation metaphor and the conceptual metaphor PEOPLE ARE PATHS (cf. ישרי דרך in 1QH[a] 10:12, and 1QS 4:2, where paths, not people, are the object of making straight).

[60] The processing of such orientation information may also affect bodily movements and postures: for example, with things that are normally up, one's eyes, face, and hand often also move upwards; see Barsalou et al., "Embodiment in Religious Knowledge," 27.

opening their mouths for song and praise but, like helpless babies or chicks, they open their mouth for nourishment, God's compassion (cf. Ps 81:10; 147:9; Isa 10:14). Thus, one understands the sentence from various integrated perspectives (e.g., PRAISING IS BEING NOURISHED) and concrete movements (mouths are opened both for eating and for speaking/singing/playing).

Another example of a text that could have been used in a ritual setting shows the saturation of conceptual metaphors behind the many linguistic expressions. The hymn in the Hodayot (1QH[a]) 10 describes the troubles of the singer:

> I thank you, O Lord, that you have placed my soul in the bundle of the living and that you have protected me from all the snares of the pit; f[o]r ruthless people have sought my life when I hold fast to your covenant.
>
> They are a council of deception and a congregation of Belial. They do not know that my station comes from you and that by your kindness you save my life, for from you come my steps.
>
> And because of you they have threatened my life, so that you may be glorified in the judgment of the wicked and manifest your strength through me before mortal beings, for by your kindness do I stand.
>
> And I myself said, "Warriors have encamped against me; they have surrounded (me) with all their weapons of war. Arrows for which there is no cure destroy, and the blade of the spear is like fire that devours trees. Like the roar of mighty waters is the tumult of their shout, a cloudburst and tempest to destroy a multitude. When their waves mount up, deception and vanity burst forth toward the constellations."
>
> But as for me, even when my heart melted like water, my soul held fast to your covenant. And as for them, the net they spread against me seized their feet, and the snares they hid for my life, they themselves fell into them. But my feet stand upon level ground. Far away from their assembly I will bless your name.
> (1QH[a] 10:22–32)[61]

In this passage, the scribe makes use of hunting imagery, war imagery, and water metaphors. It is difficult to tell which aspects of the hymn should *not* be taken figuratively, as describing concrete events rather than experiences or feelings. But the opportunity to take them figuratively is readily apparent and makes the hymn appealing to many situations. When one is safe, one is "in the bundle (צרור) of the living" (SECURITY IS CLOSED BUNDLE/PURSE; CONTAINER SCHEME). When one feels threatened, one encounters "snares" (DANGER IS HUNTER'S TRAP). When one feels God's help, one's "steps" are with God (LIFE IS WALKING/JOURNEY). When one has opponents, they "camp" and surround their enemy (CONFLICT IS SIEGE). Many such metaphors may have become conventional, but they nevertheless contribute to the lived experience in hearing such a hymn. If a prayer or hymn had very few such concrete cues as to where to focus one's attention, it became more laborious to learn and transmit. Our example also reveals how abstract ideas—for example, human agency and the dilemmas humans face—are conceptualized in metaphoric terms: "But as for me, even when my heart melted like water, my soul held fast to your covenant."

Such cues in the text may also create experiences that are often called altered states of consciousness. We all know from experience that when we "dwell" on something that takes our full attention, we suddenly discover how time has passed without us noticing it, or we "come back down to earth," feeling that we had been elsewhere for a while, with our mind having wandered off before returning to the present moment. The final question is whether embodied language and the engagement of the body in rituals may also make for more memorable experiences. An early idea in the cognitive science of religion was that minimally

[61] Translation by Eileen M. Schuller and Carol A. Newsom, *The Hodayot (Thanksgiving Psalms): A Study Edition of 1QH[a]* (Atlanta: SBL, 2012), 33–35.

counterintuitive concepts are better recalled.[62] That is, those concepts and ideas that violate ontological categories—such as walking trees or talking tables—are memorable because they catch our attention, but at the same time are not too difficult to understand.[63] However, not all tests support this idea, and it has also been suggested that the role of different cultural expectations is an important variable.[64] Rituals often contain actions that also violate everyday (cultural, learned) expectations: for example, after the confession of sins, one might expect a petition for forgiveness, yet in the covenant ceremony of 1QS this is lacking.[65] Likewise, emotional arousal does not automatically increase the accuracy of recollection; rather, emotions increase one's trust in the memories.[66]

3.3 Rituals Rely on Extended Knowledge and Extended Knowledge Mediates Ritual Practice

Humans do not carry all information in their bodies, but also make use of interactions with their environment and material objects, such as written texts, symbols, and architecture, and that environment affects their cognition (just think of the modern discussion on how mobile technology affects our ability to concentrate).[67] The first implication of this extended knowledge with respect to rituals is obvious: written texts can contain more words than one individual can recite by heart, and such texts serve as a counter-force to the speed of change that takes place through transmission. For a literate and well-trained person, it may require less effort to start reading than reciting from memory, although in reading Hebrew or Aramaic, which requires fluency in the language, oral experiences may still have played a major role. Scholars have noted how the scrolls and codices differed from each other and changed practices, but less research has been done on how scrolls of different size or quality may have affected the user's cognition and ability to process information.[68]

But the second implication is no less important: it is the role of material elements to trigger emotions and memories and attract attention. Tefillin were referred to above as amulet-like objects used for protection, and from the Judaean identity perspective, it may have been significant that they were *inscribed* objects, so as to distinguish them from other amulets.[69] Another prime example are the stepped pools and stone vessels that spread during the Hasmonean and Herodian time: the material forms, perhaps emulating other existing material culture (cf. Greek baths and Idumean hip-baths; stone vessels resembled metal objects rather

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[62] Pascal Boyer and Charles Ramble, "Cognitive Templates for Religious Concepts: Cross-Cultural Evidence for Recall of Counter-Intuitive Representations," *Cognitive Science* 25 (2001): 535–64.

[63] Catchy novel concepts spread easily, but for example the use of the division into sons of "light and darkness" seems to have spread more efficiently among modern scrolls scholars than the producers of the scrolls themselves—if judged by the occurrences, which are fairly few in the scrolls.

[64] Michaela Porubanova, "Is Memory Crucial for Transmission of Religious Ideas?" in *The Cognitive Science of Religion*, 93–100.

[65] Daniel K. Falk, "Petition and Ideology in the Dead Sea Scrolls," in *Prayer and Poetry in the Dead Sea Scrolls and Related Literature*, ed. Jeremy Penner, Ken M. Penner, and Cecilia Wassen, STDJ 98 (Leiden: Brill, 2012), 136.

[66] E. A. Phelps, "Emotion's Impact on Memory," in *Memory and Law*, ed. L. Nadel and W. P. Sinnott-Armstrong (Oxford: Oxford University Press, 2013), 7–28. Early theorists in the cognitive science of religion also identified two basic ways in which religious (oral) traditions may seek to ensure the transmission of complex ideas: by frequent repetition and by high emotional arousal; see Whitehouse, *Modes of Religiosity*; McCauley and Lawson, *Bringing Ritual to Mind*.

[67] Lambros Malafouris, "The Brain-Artefact Interface (BAI): A Challenge for Archaeology and Cultural Neuroscience," *Social Cognitive and Affective Neuroscience* 5 (2010): 264–73; John A. Teske, "From Embodied to Extended Cognition," *Zygon* 48 (2013): 759–87; Richard Menary, ed., *The Extended Mind* (Cambridge, MA: MIT Press, 2010).

[68] However, see contributions mentioned in Ch. *** (Williams essay), and Johnson, *Readers and Reading Culture*; Eva Mroczek, *The Literary Imagination in Jewish Antiquity* (Oxford: Oxford University Press, 2016); Eva Mroczek, "Early Jewish Literature," in *Dictionary of the Bible and Ancient Media*, 101–109.

[69] Cohn, *Tangled Up in Text*, 87–92.

than pottery), visually and spatially signaled the importance of purity.[70] Without such structures, purification was harder to witness—anyone could wash and launder their clothes in any place with water—but the stepped pools added a space to visit, making the practice comparable to sacrifices that had to be brought to the Temple. If the pools were in individual houses, the changes may have been visible only within the household. (Were the pools shared by male and female, master and slave, what about host and guest?). If the pools were located in connection with gathering places, agricultural estates, tombs, and the Temple, then they could have served as public reminders for people of the threats involved in impurity (and sin). Thus, they could become identity markers—even though this was not their intended purpose.

Some texts testify to prayer practices in connection with purification (4Q414). Purification performed with recited words feels intuitively more effective than mere immersion without any adjacent communication, similar to how blessing feels more effective with bodily gestures (like hands spread above a person) than without them.[71] Again, correct purification according to the rules is the desired message, but the manner of purification and its semi-public nature (in stepped pools, by immersion) may invite other ritualized activities (prayer), and the nature of the message changes with the medium.[72] Prayers in general structured sacred time for the members of the Qumran movement.[73] They could also implement a Temple service outside the Temple, using the language of worship and thus verbalizing the Temple and reactivating experiences from the Temple.[74] Rituals re-create mini-worlds and virtual realities.

4. Conclusions

In conclusion, rituals are effective mediators of many types of knowledge. Collective rituals create the *shared knowledge* needed to coordinate action, to make sure everyone receive that knowledge (e.g., by repetition). They facilitate cooperation and trust by enabling participants to signal their commitment. Rituals mediate *embodied knowledge* because they arouse emotions and enhance self-relatedness, employ mechanisms that reduce anxiety, encode information in the body, engage imagination, and reveal the conceptual metaphors that ground human thinking. Rituals rely on *extended knowledge*—by rehearsing and visualizing master narratives, structured in time, data that is transmitted over generations in textual form becomes collective memory and the basis for communal identity. Knowledge situated in material objects and the environment, such as in stepped pools or tefillin, carry and modify ritual practice via their form and "user-interface": stepped pools invite comprehensive immersion instead of a

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[70] Stuart S. Miller, *At the Intersection of Texts and Material Finds: Stepped Pools, Stone Vessels, and Ritual Purity Among the Jews of Roman Galilee*, JSJSup 16 (Göttingen: Vandenhoeck & Ruprecht, 2015); Yonatan Adler, "The Hellenistic Origins of Jewish Ritual Immersion," *JJS* 69 (2018): 1–21; Rick Bonnie, *Being Jewish in Galilee, 100–200 CE: An Archaeological Study* (Turnhout: Brepols Publishers, 2019).

[71] Paul Rozin and Carol Nemeroff, "The Laws of Sympathetic Magic: A Psychological Analysis of Similarity and Contagion," in *Cultural Psychology: Essays on Comparative Human Development*, ed. James W. Stigler, Richard A. Shweder and Gilbert Herdt (Cambridge: Cambridge University Press, 1990), 205–32, mention the laying on of hands as example of positive contagion.

[72] Ari Mermelstein, "Emotional Regimes, Ritual Practice, and the Shaping of Sectarian Identity: The Experience of Ablutions in the Dead Sea Scrolls," *BibInt* 24 (2016): 492–513, discusses how the sectarian purification practice mediates foundational beliefs about the movement, especially the nothingness, of human beings, the gift of divine election, and the boundary between insiders and outsiders. Purification denotes the redemption that will be realized fully in the future.

[73] See Daniel K. Falk, *Daily, Sabbath, and Festival Prayers in the Dead Sea Scrolls*, STDJ 27 (Leiden: Brill, 1998); Jeremy Penner, *Patterns of Daily Prayer in Second Temple Period Judaism*, STDJ 104 (Leiden: Brill, 2012); idem, "Mapping Fixed Prayers from the Dead Sea Scrolls onto Second Temple Period Judaism," *DSD* 21 (2014): 39–63; Jeremy Penner, Ken M. Penner, and Cecilia Wassen, eds., *Prayer and Poetry in the Dead Sea Scrolls and Related Literature*, STDJ 98 (Leiden: Brill, 2012).

[74] For more on the construction of an experience of progression throughout the liturgical cycle, see Daniel K Falk, "Liturgical Progression and the Experience of Transformation in Prayers from Qumran," *DSD* 22 (2015): 267–84.

mere pouring of water and create a more visible, (semi-)public, structured practice, and tefillin mark the bodies that belong to the land and live on in it.

I have touched upon a few possible ways in which the rich evidence in the scrolls might be further investigated. Ritual is old technology, but it can be endlessly varied according to new contexts and situations. The human body is its instrument, especially the social human body, which learns from others and derives its motivation from others. My emphasis was on rituals as types of media, not on their success or failure as means of communication. The information was divided into factual, normative, meta-, and motivational information. In the end, we may come back to the question of how the medium is the message: What (unexpected) consequences can rituals have for a knowledge economy? What might be the consequences that occur because of new technology or the various forms that the technology takes?

I discussed the way in which the material presence of stepped pools changed the nature and role of purification. It has also been suggested that when the purity rules were being systematized and more detailed information transmitted about purification,[75] female purification practices became equal to those of male participants, and gender difference was diminished (though Lev 15 did not perceive females as active agents in purification, only as passive transmitters of impurity). Males became equally vulnerable since their purity demanded self-control. Such consequences were not the aim of scribal practices and elaborations on the purity rules, but they could influence the way in which gender was perceived in the movement.[76]

The obvious message of collective rituals is to make a group of strangers come to see themselves as one body. But bringing people together in a specific manner can also have undesired consequences. An undesired outcome of such a ritual would be dropping out from participation; envy or anger; challenging of authority. The covenant renewal, in light of 1QS, was about entering into the covenant and hearing its blessings and curses (see Deuteronomy 27–30), but when the blessings and curses were detached from the individual's moral behavior and attached to determined divine lots, as in 1QS, the unintended consequence was the problem of sinful acts of the righteous. This called for the development and articulation of inner anthropology, as we saw in 1QS 4. Another unintended consequence was that the ritual activities (sacrifice and purification) of those outside the covenant had to be deemed ineffective (1QS 3:1–12). This demanded condemning one's neighbors, maintaining even stronger boundaries with earlier ingroup members than with outgroup members, and drawing attention to maintaining boundaries rather than achieving the mission—a mission impossible in the end.

[75] E.g., Ian C. Werrett, *Ritual Purity and the Dead Sea Scrolls*, STDJ 72 (Leiden, Brill, 2007). See also important suggestions on the legal attitudes of scribes who created halakhot by Jonathan Vroom, *The Authority of Law in the Hebrew Bible and Early Judaism: Tracing the Origins of Legal Obligation from Ezra to Qumran*, JSJSup 187 (Leiden: Brill, 2018).

[76] Jessica M. Keady, *Vulnerability and Valour: A Gendered Analysis of Everyday Life in the Dead Sea Scrolls Communities*, LSTS 91 (London: Bloomsbury, 2017).