

Judaism AND Emotion

Texts, Performance, Experience



EDITED BY SARAH ROSS,
GABRIEL LEVY, AND SOHAM AL-SUADI

ROSS, LEVY, AND AL-SUADI, EDS. / Judaism AND Emotion

PETER LANG 

Judaism and Emotion breaks with stereotypes that, until recently, branded Judaism as a rigid religion of laws and prohibitions. Instead, authors from different fields of research discuss the subject of Judaism and emotion from various scholarly perspectives; they present an understanding of Judaism that does not exclude spirituality and emotions from Jewish thought. In doing so, the contributions account for the relation between the representation of emotion and the actual emotions that living and breathing human beings feel in their everyday lives. While scholars of rabbinic studies and theology take a historical-critical and socio-historical approach to the subject, musicologists and scholars of religious studies focus on the overall research question of how the literary representations of emotion in Judaism are related to ritual and musical performances within Jewish worship. They describe in a more holistic fashion how Judaism serves to integrate various aspects of social life. In doing so, they examine the dynamic interrelationship between Judaism, cognition, and culture.

SARAH ROSS obtained her Ph.D. at the University of Music and Theatre Rostock, Germany. She currently works as a university assistant (post-doc researcher), lecturer, and study counselor at the Department of Musicology as well as at the Centre for Cultural Studies at the University of Bern, Switzerland. She is a winner of the Hadassah-Brandeis-Institute Research Award, Brandeis University/USA (2004). From 2006 to 2009, she obtained a doctoral fellowship of the Deutsche Forschungsgemeinschaft (German Research Foundation). She has published widely on American Jewish women's music and other subjects.

GABRIEL LEVY obtained his Ph.D. in religious studies from the University of California, Santa Barbara. He is currently Associate Professor in the Department of Archaeology and Religious Studies at the Norwegian University of Science and Technology. He is the author of *Judaic Technologies of the Word: A Cognitive Analysis of Jewish Cultural Formation* (2012).

SOHAM AL-SUADI obtained her Ph.D. at the University of Basel, Switzerland. She is currently a university assistant (post-doc), lecturer, and researcher at the Institute of Biblical Studies (New Testament) at the Faculty of Theology at the University of Bern. She is in the process of writing her second book on early Christian prophecy.

ISBN 978-3-0391-1A72-2



9 781433 118722

WWW.PETERLANG.COM

Contents

Acknowledgments	vii
Foreword	ix
<i>René Bloch</i>	
General Introduction: Reflections on Judaism and Emotion	1
<i>Sarah Ross</i>	

On Part One: Texts

Introduction to Texts Section	17
<i>Soham Al-Suadi</i>	
Dining Social Alternatives: Paul's Dealing with the Emotional Diversity of the Hellenistic Meal	21
<i>Soham Al-Suadi</i>	
Matters of the Heart: The Metamorphosis of the Monolithic in the Bible to the Fragmented in Rabbinic Thought	43
<i>Reuven Kiperwasser</i>	

Part Two: Performance

Introduction to Performance Section	63
<i>Sarah Ross</i>	
Singing Their Heart Out: Emotional Excitement in Cantorial Recitatives and Carlebach Nusach	67
<i>Amit Klein</i>	
Emotional and Cognitive Rhythms in Jewish Ritual Music	99
<i>Gabriel Levy and Sarah Ross</i>	

Part Three: Experience

Introduction to Experience Section	121
<i>Gabriel Levy</i>	

When Judaism Became Boring: The McCauley-Lawson Theory, Emotions and Judaism.....	123
<i>Tamas Biro</i>	
A New Method for Analyzing Emotions in Jewish Texts.....	153
<i>Gabriel Levy</i>	
Index	163

PART THREE

Experience

Introduction to Experience Section

This section contains two very different chapters that both nonetheless utilize theories and methods from the mind sciences to gain insights about Judaism and emotion. Biro's chapter is a groundbreaking study examining the usefulness and challenges of applying theories from the cognitive science of religion to Judaism. Judaism presents a problem for these theories because it persists despite a lack of extreme and high-arousal rituals, or rituals that directly engage counter-intuitive agents. Biro thinks the answer is to be found in part by modifying the dominant theories in the cognitive science of religion. He argues that ritual systems persist when they balance the 'tension' between boredom and high emotion. While in a theological sense Judaism moves away from the standard high-arousal elements of ritual, in practice Jewish sects tend to incorporate many theologically incorrect elements that insure the rituals will not be boring. At times, this can lead to movements within Judaism that challenge traditional theology, from Messianic movements to new-spiritualism.

While Biro's chapter is offered as a contribution to the cognitive science of religion, Levy's chapter is not. Instead Levy hopes to use tools from the mind sciences, including cognitive science, to enlighten the study of Jewish texts within the humanities. He uses the model of emotion developed in Geneva at the Swiss Center for Affective Sciences, to argue for three possible methods to integrate the study of emotion into textual studies. The first method uses an Excel Macro program designed by the to analyze the emotional valence of small sections of text. The second uses the Automap data-mining program developed at Carnegie Mellon to analyze large sections of text. The third method combines these two methods to analyze large sections of text using emotional language as a hermeneutic key. Levy then presents an initial application of these methods to Song of Songs and Song of Songs Rabbah.

When Judaism Became Boring: The McCauley-Lawson Theory, Emotions and Judaism

Since the 1990s, a number of Jewish histories have been written that would have been unimaginable in traditional historiography: the history of the Jewish man and woman, the history of the Jewish body or the history of Jewish sexuality.¹ It is actually surprising that the history of the Jewish emotions have not yet been written. Following predecessors—Michael Fishbane or Hava Tirosh-Samuelson—focussing on the role of (certain types of) emotions in specific literary genres and specific historical contexts, new developments toward such a history include the works of Jewish studies scholar Joel Gereboff (2008)² and biblical scholar Thomas Kazen (2011).

Yet, I am not going to fill this lacuna here. Rather, I am turning the question around: is it possible to write Jewish history (the history of the Jewish religion, the history of Jewish thought, the history of the Jewish people, the history of Jewish folklore, etc.) using emotions as one of the main explanatory factors? Even this enterprise is infeasible within the confined space of this chapter. Therefore, I am further refining my goal: to sketch the contours of a history of Judaism using a specific theoretical framework borrowed from the *cognitive science of religion*.

Unduly underrepresented in Jewish studies before the publication of the current volume, the cognitive science of religion has become one of the most influential theories of religion in the last decade. Approximately half of the chapters in a recent overview of contemporary religious studies (Stausberg 2009) address books and theories belonging to this new paradigm. Based on their earlier, 1990 seminal work, E. Thomas Lawson and Robert N. McCauley developed a cognitive theory accounting for the dynamics of religious rituals³ that will serve as our point of departure. Their 2002 theory reflected upon Harvey Whitehouse's (1995) analysis of a 'splinter group outburst', which he had witnessed during his fieldwork on a cargo cult in Papua New Guinea.

Both McCauley and Lawson, and Whitehouse attempted to identify the cognitive factors underlying religious rituals and movements, and thereby to explain the mechanisms giving rise to what Max Weber had called ‘routinized’ and ‘charismatic’ forms, while Ruth Benedict had identified as ‘Apollonian’ and ‘Dionysian’ practices.⁴

Whitehouse’s *Modes Theory* offers a dozen psychological and socio-political features distinguishing between the *doctrinal mode* and the *imagistic mode*, which in turn are related to the use of two different memory systems in the human mind. McCauley and Lawson rather focus on the mental representation of the rituals, which we shall return to (pp. 130ff). They make predictions about the dynamics of different ritual systems as a function of the distribution of the rituals along three dimensions: the frequency of certain rituals, the mental representations of their conceptual structures, as well as the emotions and sensory pageantry associated to them. In particular, the lack of a certain type of high-arousal rituals creates an unbalanced system, yielding the *tedium effect*. The tedium of such a routinized-doctrinal system will in turn prepare the floor for *splinter group outbursts*, characterized by charismatic-imagistic forms of religions and by high-arousal rituals with mental representations of the missing type.

First, we shall turn to the question whether cognitive science can approach emotions in a religious context at all, and then introduce the Lawson-McCauley model with examples taken from Judaism. We shall conclude that the purely halakhic view of Judaism is prone to ‘tedium’ (in a purely technical sense) and therefore the model predicts the emergence of ‘splinter groups’ (used as a technical term). We address three core topics, though a number of issues are simplified or left aside.⁵ First, the connection between the technical term *tedium* and the everyday concept of *boredom* raises the question what roles emotions play in a cognitive approach to rituals. Second, we ask whether Jewish practices corroborate or refute the Lawson-McCauley model, and what kind of refinement is needed in order to adopt the model to Judaism. Finally, we speculate about whether this *tedium* can account for certain phenomena in Jewish history and the history of Judaism. The present chapter cannot provide definitive answers, but pave the way to them.

Cognitive Science and Emotions: A Contradiction in Terms?

A cognitive model for emotions and religion? The reader may be surprised at this point. Indeed, many scholars believe that the cognitive sciences are about cognition, placing rational, rule-based thinking at the core of their interest:

planning actions, performing mathematical operations, playing chess, recognizing a visual scene and understanding language. No doubt, cognitive scientists fifty years ago put these issues mainly related to human cognition on their research agenda, hence the term ‘cognitive science’. At the same time, they decided to deny, to ignore, to put in parenthesis, or at least temporarily to underplay topics that had been central to psychology earlier, such as behaviour, emotions, bodily factors and the social-cultural context.

Traditional Cognitive Science

Looking back in time, despite opposing voices in the history of the cognitive enterprise, I suggest viewing the denial of these topics merely as a useful tactic in the research strategy: it was easier to develop new tools, techniques and approaches, new paradigms while only tackling “rational” phenomena initially. This new approach was characterized by two key innovations: a biological, brain-centric view, as well as a computational perspective (we return to them immediately). Subsequently, the second or third generations of scientists were able to refine this biological-plus-computational approach by also taking further factors into consideration, including, among many others, emotions. Indeed, emotions have been central in the work of Antonio Damasio, a major figure of contemporary cognitive science (see for example, Damasio 2003). Moreover, the growing body of literature under the umbrella term *embodied and embedded cognition* also reemphasizes emotions on the cognitive science agenda (Clark 1997).⁶

In fact, the term “cognitive” has become a misnomer for those who are used to the old meaning of the word of Latin origin, *cognition*: “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses; a perception, sensation, idea, or intuition resulting from the process of cognition.”⁷ In current usage, *cognition* denotes any function of the mind/brain, including not only the recognition of a face, the performing of a logical deduction step or the decoding of the meaning of a linguistic utterance, but also non-knowledge acquiring activities: the production of a sentence, the planning of an action series, the learning of how to bike, and many, many others.

Cultural products, such as literature, artefacts, and not least, religious beliefs, texts and rituals come into existence because the mind of an author has created them, the mind of a transmitter is willing to transmit them, and the mind of a reader is able to make sense of them. Therefore, they are also related to functions of the brain, and so these domains are relevant to the cognitive sciences. Even emotions and human behaviour are produced by the

human mind/brain, and so they cannot be dismissed from the cognitive enterprise. Moreover, social groups are formed by individuals who perceive the group through their mind, and join the group as a decision made by their mind.⁸ Social phenomena emerge from the interaction of a large-number of mind/brains.⁹

The cognitive approach to human behaviour, society, culture and religion can be summarized as viewing them as products of the human mind/brain. Their details depend on constraints imposed by the mind/brain: how they can be represented by the mind/brain and how they can be transmitted from mind/brain to mind/brain, given a social network. (Note that even the social network is constrained by the social capabilities of the human mind/brain.¹⁰) Certain representations are easier to acquire, simpler to produce and to interpret, more likely to be transmitted, and therefore more wide-spread. Something is “popular” if it is attractive to the mind/brain.

The cognitive sciences are engaged in uncovering the mechanisms beyond the cryptic terms that I have just used in the previous sentences: ‘representation’, ‘production’, ‘interpretation’, ‘acquisition’ and ‘attractiveness’. In order to understand these mental mechanisms, cognitive scientists disengage the two parts of the expression ‘mind/brain’: the computational and the biological. The more biologically inclined among them follow a bottom-up approach: they focus on the *brain*, the physical organ, and its physiology. They visualize which brain area is active during what kind of activity, and they aim at discovering the way information flows from cell to cell. Those adopting the top-down approach, however, employ models—more or less formal ones, eventually implementable on a computer—to simulate the same information flow in the *mind*, an abstract information processing device. Advances in this second approach reproduce the observable phenomena in a gradually improving manner. Ever better industrial by-products of the computational perspective are known as ‘artificial intelligence’, and include autopilot systems, signature recognition software, human-computer communication technology, just to name a few. Yet, without advances in the bottom-up approach we will not know if the human brain also employs the same “software”. At the same time, the bottom-up approach would be lost amidst the billions of neurons without the help of top-down scholars, who rely not only on the careful observations of the phenomena, but also on the knowledge accumulated by previous generations of (non-cognitive) scholars working on the same field.

To summarize, in my view, cognitive approaches are about two main themes. First, they are about the idea that human phenomena are products—though, often through many intermediate steps—of the human brain. And second, they are about the idea that as long as we cannot understand all details

of the human brain, we should create formal models of the mind. Formal models can be computer programs, mathematical equations, formalisms with tree-like graphs or box diagrams with interacting components. Deducted from carefully observed phenomena, the formal models serve as lighthouses on the sea of brain neurons. Some lighthouses may prove to be misleading, and then scholars have to create new models by reconsidering the phenomena. The long-term aim is to understand how information flow in the brain gives rise to the observable products of the mind.

Thus far, we have discussed the traditional approach in the cognitive sciences. Yet, to complicate the situation, emotional, bodily and societal factors often interact with what people would see as “rational” mental functions. Hence, it is a fashion nowadays to criticise the traditional view of the mind as a disembodied, emotionless, isolated computer. I would rather argue that the view of a disembodied, emotionless, isolated computer was a very useful, strategic first step, before including body, emotions and societal factors into the refined approach. Some say that cognitive science *by definition* rejects factors that had been unquestioned earlier—such as emotions, body and group influence—and since this error is nowadays being slowly discovered, the cognitive enterprise is approaching its end. However, contrary to their view, cognitive science is flourishing, as testified by the ever-growing number of publications and ever-growing conference attendance figures. All these originally ignored complicating factors are gradually imported into the methodology based on a brain-centric view and (formal, computational) models.

Emotions and Cognitive Science

Before moving on, let us discuss the notion of ‘emotions’ from a cognitive angle.¹¹ The history of science, and especially the history of the cognitive sciences, is replete with cases when ‘folk-notions’ (common language terms) are replaced with scientific notions. A typical folk-notion is *music*, which since Pythagoras has been decomposed into scientific notions such as pitch (frequency of sound waves), volume (energy) and rhythm. Moreover, pitch, volume and rhythm—or, frequency and energy—are characteristic not only of music, but also of speech, noise and many more physical phenomena. Thus, music has been reduced—or at least related—to acoustics, and yet, neither music-lovers nor musicologists have lost anything by this decomposition.

The same seems to happen to the concept of ‘emotion’.¹² It is most probably not feasible to find a one-to-one correlate in the brain for the common concept of *emotion*, or for any distinct emotion category (Lindquist et

al. 2012). Emotions are rather constructed of brain networks of more general purpose. The mind encodes various phenomena, including heart rate and sweating level, but also some kind of “attitude”. By “attitude” I mean one or more bits of information saved somewhere in memory whose value may determine future decision making processes.

The folk-psychological notion of “loving person X” is thus decomposed into a number of mental facts. For instance, the heart rate increases if the representation of person X becomes activated in the mind, due to either a visual input in X’s presence, or a mental input when remembering X. A further mental fact related to this notion is that the brain will make decisions involving X in a biased manner, due to the above mentioned “non-rationality bit” of information.

Another folk-notion, “disliking food Y”, primarily means that food Y is not preferred to its alternatives in a situation of choice. The bit of information causing the choice of an alternative food can be due to learning from previous personal experience or from learning in a cultural context (Biró 2011). When the mental representation of food Y is turned on, a number of further data structures also become active: beside the non-preference bit, probably also memories of the situation in which this bit was learned. The latter subsequently may activate knowledge of social and cultural consequences (punishment or ostracism if one consumes prohibited food). Bodily reactions (nausea), primed by the memory trace, may serve as a reinforcement in the choice making process.¹³ Bodily reactions are again represented in the mind, triggering further mental functions (hand and head movements, communication about one’s nausea, saving a memory trace of the current situation, etc.). All these can, in turn, cause physiological effects, such as increased heart rate and sweating, as well as decreased computational resources allocated to mental processes running in the same time (leading to what one would call “irrational decisions”). Some of the processes are conscious, others are not. Some of them can be controlled, others cannot. The resultant is experienced as the phenomenology of the folk-psychological concept *emotion*. Yet, behind the scenes, we have extremely complex computational processes performed by the mind/brain. A cognitive science of emotions ought to decipher the “computer code of this software”.

Let us turn back to Judaism and emotions, and how we can tackle them from the point of view of the cognitive science of religion.

A Personal Experience

Let me start with a story. It happened in 2004, in Groningen, a major town in the Northern part of the Netherlands where I worked on my PhD at that time. I used to lead the service in the small local Jewish community: although I lack all requisites of a professional cantor, I had taken it on myself to coordinate the biweekly services as a *sheliach tzibbur*, the ‘representative of the community’. For the high holidays, however, two youngsters were invited from Amsterdam, who were much more proficient than me. A few hours before the beginning of Yom Kippur, I received a call from the head of the community, who told me that one of the two guys would not come because his wife had just given birth and there were some complications. So, the head of the community asked me if I would be able to lead the Yom Kippur service with the other youngster. Well, that was a rhetorical question, for I had no choice. We divided the labour so that he would do the harder job, including *Kol Nidrei*, *Musaf* and *Minchah*, whereas I would do the relatively shorter services, that is, *Shacharit* and *Neilah*. So I was standing in the Groningen synagogue, at the place I used to stand every second week, but this time I was reciting *Avinu Malkenu* at the end of the *Neilah* service. This is the very last portion of the very last service on the holiest Jewish holiday, a series of requests beginning with the words “Our father, our king”. It was an extremely emotional and moving moment.

Can we understand why it was emotionally so touching? On a regular weekday I recite my prayers without the slightest *kavanah* (concentration, emotion). A Shabbat prayer is less frequent, Yom Kippur is even rarer. Importantly, it was a Yom Kippur falling on Shabbat, and *Avinu Malkenu* was only recited during the *Neilah*—a further possible source of my emotions. Do not forget that this was the very first time in my life I had been in such a situation, so it felt like undergoing a rite of passage. Consequently, there must be a *frequency effect*: the rarer the ritual, the higher the related emotions.

Second, standing in front of the community is also a factor increasing emotions, either on a regular Shabbat or in this special occasion. Although there is no formal difference between the status of the *sheliach tzibbur* and that of a regular congregant, still the fact that the first one is a “representative”, who is “sent” by the community, has a special effect. The cantor feels his own importance and central place in the liturgy, as if he were the one making the service, not just one among many participants with a somehow special role. Here we encounter a first example for a *theologically correct*¹⁴ halakhic construct contradicting the *intuitive* mental representation of the ritual; emotions depend on the latter, not on the former.

So I was standing there in front of the wide-open Torah Ark, which reminded me “the gates of the heaven that were just closing”, while I was trying to slip in my last petitions through them. If I did it correctly, I could coax the Divine to grant to each of us and the whole community a good new year.¹⁵ In such a situation, even the most sceptical person becomes emotional. This second factor, the constellation of the participants (“who does what, when, where, on behalf of whom”), will be called the *form of the ritual*.

Third, there are additional factors. I remembered the *Avinu Malkenu* recited by Professor Schweitzer, former neologue chief-rabbi of Hungary during a Neilah in the mid-1990s, which since then served to me as an example. Listening to Professor Schweitzer, you could be sure that each line and each word deeply resonated in him, and that is what I wanted to imitate in 2004.

Another crucial factor is the bodily effects of fasting in the previous twenty-five hours, together with strained prayers. Dehydration is especially known to be one of the factors causing altered states of consciousness (Ludwig 1968). Although these last factors are unquestionably central to the cited example, we shall focus on the earlier ones. McCauley and Lawson, in their 2002 book, asked which of the first two factors—frequency or form—is a better predictor of the emotions associated with the rituals. They argued it was the form. Now we turn to a more precise definition of what *ritual form* is, and how it predicts emotions.

The Cognitive Science of Religion on Rituals

The starting point in the new paradigm called the *cognitive science of religion* is that religious phenomena are variants of analogous secular phenomena with a twist. Luther Martin summarized the core of this approach as the idea that “religious thought and behavior are to be understood as ‘closely related variants of ordinary cognitive processes.’”¹⁶ For instance, the mental representation of gods, spirits, ancestors and demons are borrowed from the mental representation of humans, but some of their features are altered, turning them into what we shall call a *counterintuitive agent* (Boyer 1994 and 2001).

Similarly, rituals are actions, and the cognitive mechanisms behind rituals are the same as the cognitive mechanisms behind secular actions. What we need then is a model of actions in general, as well as the explanation of what makes rituals different from secular actions. The scheme of the *human action representation system* introduced by Lawson and McCauley in 1990 is based on

contemporaneous Chomskyan syntax, the theory of the so-called thematic roles (the *theta*-theory). What makes rituals different is that certain roles of the actions are filled by concepts originating in a religious framework: most often, by culturally postulated counterintuitive agents or other counterintuitive elements, where *counterintuitiveness* must be understood in a technical sense. Let us now unpack this summary of the cognitive approach to rituals.¹⁷

Representation of Actions and of Entities

Let us begin with a simple observation: the difference between an active and a passive sentence in English is that the entity being “acted upon” (the “logical” or “semantic” object) is moved from the syntactic object position to the syntactic subject position, whereas the “acting” entity (the “logical” or “semantic” subject) of the sentence is either dropped or moved syntactically to a phrase containing the preposition *by*. Consequently, we need to make a distinction between syntactic positions—syntactic subject and object—on the one hand, and the “semantic” or “logical” roles, on the other hand. The latter ones are called *thematic roles* in modern syntax. A verb has a number of arguments or roles or slots that must be filled in order for the sentence to be grammatical. For instance, the verb *to give* has three slots: a *giver* (the person who gives), a *given* (the object being given) and a “*givee*” (the person who receives). A major concern in syntactic theory is how these slots are filled in a sentence, that is, how these slots are paired with syntactic positions such as the subject, the object, the dative phrase, the *to*-phrase or the *by*-phrase. Compare the differing syntactic ways of instantiating the same thematic roles in the following sentences: *John gives Mary an apple*; *John gives an apple to Mary*; *An apple is given to Mary (by John)*; *Mary is given an apple (by John)*; *John presents Mary with an apple*.

The most known thematic roles are the *agent* (that is the “logical subject” of an action-verb), the *patient* (that is the “logical object”) and the *instrument*.¹⁸ The verb *to give* suggests that we also need a *receiver* or *goal* role. *Time* and *location* are also slots that are very often instantiated, although most verbs do not require them necessarily to be filled. Additionally, a number of verbs fill their subject-position not by an agent, but by a different role, for instance an *experiencer*. If we compare the English sentence *I like that girl* to the French sentence *Cette fille me plaît*, then we see that the *liker* role is moved to a dative position in French, while the *liked* role becomes the syntactic subject of the sentence. The rule in both French and English is that the agent of an active sentence becomes the subject. Yet, in the present case, the verb *to like* / *plaire*

has no agent, rather an experiencer, which is more flexible and can be realised as a dative object in certain languages. Such linguistic considerations have multiplied the number of thematic roles in the literature, and we still miss a list that is comprehensive across languages and across scholars.

In their 1990 book, Lawson and McCauley take for granted that at least action-verbs have an agent, and most often also a patient and/or an instrument. For instance, the action of *giving* has an agent (the giver), a patient (the given object) and a goal (the receiver). This trichotomy is a universal feature of the human mind representing the action of giving, and is independent of how different languages express this action, and which syntactic positions they assign to the three roles.¹⁹ In the case of a religious sacrifice, the human mind makes use of the same action representation system: the action is again *giving*, but with its slots being filled by religiously significant elements. Often the giver must be a priest, that is, a person having earlier undergone other rituals, also involving a deity. Religious constraints may also apply to the patient, that is, to the object being given. But most importantly, the role of the receiver is fulfilled by a deity (such as a god, a spirit, an ancestor)—this is the crucial twist that differentiates between a secular *giving* action and a religious one, called a *sacrifice*. In general, a ritual is, for Lawson and McCauley, an action that contains a religiously significant element in its structural description.

What is a “deity” or a “religiously significant” entity, which turns a general action into a ritual? Besides representing actions, the human mind also represents people, animals, plants and objects. Based on advances in psychology, scholars in the cognitive science of religion have been hypothesizing that the human brain entertains a number of *ontological categories*, such as artefacts, natural objects, plants, animals and humans. These categories come with *ontological expectations*, such as solid objects are impenetrable (*folk-physics*), humans and animals are mortal and beget conspecies (*folk-biology*), as well as humans are driven by their emotions and by their limited knowledge (*folk-psychology*). An entity is an *agent* in an ontological sense (not to confuse with the thematic role called *agent*), if it is self-propelled, performing goal-directed motions: typically humans, but also including animals and “intelligent” robots. Moreover, the human mind is also able to represent entities that violate some of the ontological expectations; these are referred to as *counterintuitive*, in a technical sense. Thus, fairy tales and mythologies, but also modern sciences are replete with counterintuitive concepts. Spirits and some elementary particles violate folk-physics because they are not impenetrable, whereas immortal mythological heroes and fabled

animals that beget kids of another species violate folk-biology. From a cognitive point of view, deities are (culturally postulated) *counterintuitive agents*. In a word, religious concepts employ the same mental structures used to represent everyday entities, but there is again a twist: they may be counterintuitive.

This ontology also influences the action representation system. A filter ensures that only agents (in an ontological sense) may fill in the agent slot of actions. In the case of a *giving* action, the ontological category of each of the three roles is fixed: both the giver and the receiver must be agents, whereas the patient tends to be an object (including food). This constraint is also satisfied by *giving* actions with a religious twist, that is, by sacrifices: the giver is a human agent, while the receiver is a superhuman counterintuitive agent.

Similarly, and here I am diverging from the opinion of Lawson and McCauley, prayers can also be seen as a general cognitive phenomenon, namely the action of communication, with a religious twist.²⁰ Parallel to the *giving* actions, the *speaking* actions also have three roles: an agent (the speaker), a patient (the message being uttered) and a receiver (the addressee). In order to turn a simple *giving* action into the religious ritual of a sacrifice, we needed to add religious restrictions to who can be the giver, what can be the given and, most importantly, by stipulating a counterintuitive givee. Similarly, prayers are primarily actions of communication with a counterintuitive addressee; secondarily, and as a consequence, the religious conceptual system also restricts the speaker, the utterance, the time and the location of the action.

To sum up, Lawson and McCauley have suggested a theory of religious rituals that is given for free, as a bonus coming with a general cognitive model. Independently of religion, the cognitive sciences need an action representation system, such as the thematic role theory introduced for the sake of linguistics. Second, the idea of counterintuitive agents is also derivable from a general cognitive ontology consisting of five categories: natural objects, man-made artefacts, plants, animals and humans. Only a single minor twist is needed to explain the cross-culturally recurrent phenomenon of beliefs in deities. This minor twist is the only stipulation the cognitive science of religion adds to our understanding of the human mind, and so everything religious can be explained. Last, the theory of rituals comes for free, without any further stipulations, simply by combining the idea of counterintuitive agents with the already existing theory of an action representation system.

Emotions and Rituals

In their 2002 book, McCauley and Lawson reformulate the *Modes Theory* introduced by Harvey Whitehouse in 1995, another early seminal work in the cognitive science of religion. McCauley and Lawson suggest analysing rituals along three dimensions: the frequency of the ritual, the emotional arousal—or sensual pageantry—associated with the ritual, and its form. The negative correlation between frequency and emotions is self-evident: infrequent events tend to involve more emotions. However, McCauley and Lawson argue that an even better predictor for the emotions is the form of the ritual, a notion that we can now better define.

The *form* of a ritual in their approach concerns the thematic structure of the action. They distinguish between *special agent rituals*, on the one hand, and *special patient/special instrument rituals*, on the other. The former type is characterized by the agent slot being fulfilled by a counterintuitive agent, whereas the same agent appears in a different slot (such as the patient or the instrument) of the latter type. In a more elaborate version of the theory, a counterintuitive agent may also be replaced by another entity that has previously undergone an enabling ritual. Thus, priests may act *on behalf of* the counterintuitive agent because they have been ordained. A rite of passage, with a priest “acting upon” the congregant, who in turn is a passive undergoer (patient) of the ritual, is typically a special agent ritual. The deities, through the priests, their intermediaries, are the actors and bring about *superpermanent changes* in the world, changing the status of the patient. By contrast, special patient/special instrument rituals involve human agents in their agent slot, while counterintuitive agents are only present—directly or through “representatives”, enabled people or objects—in other slots.²¹ With this second type of ritual, humans bring about temporary and reversible changes, by acting upon patients related to the superhuman, or using instruments related to the counterintuitive. Actions that do not involve counterintuitive agents at all in their description may be religious actions, but are not considered rituals within this framework (Lawson and McCauley 1990).

Our key question is *why* special agent rituals involve more emotions than other rituals. A number of answers—and in fact, a number of different types of answers—can be given to such a *why*-question (Tinbergen 1963).

One train of thought refers to the transmission of the rituals, and is teleological-evolutionary by nature. The superpermanent changes brought about by the acting counterintuitive agents are irreversible, and so these special agent rituals need not be frequently repeated. Yet, if they are infrequently performed, then their details may be forgotten, and so they may

not be faithfully passed on to the next generations. In order to secure the long-term stability of a special agent ritual, it must come with high emotional arousal, causing a *flashbulb memory* (cf. the *cognitive alarm hypothesis* of McCauley and Lawson 2002, 78). Low-arousal and infrequent rituals will be sorted out from the ritual system of any culture, since neither frequent repetition nor flashbulb memory helps memorising their technical details. At the same time, high-arousal and frequent rituals may be unnecessarily too costly, exceeding the *sensory overload ceiling* (McCauley and Lawson 2002, 191). Thus, considering ritual systems as dynamic systems,²² cognitive scholars of religion have concluded that rituals are organized around two attractor positions: infrequent, high-arousal special agent rituals, and frequent, low-arousal special patient/special instrument rituals. Ritual form and emotions are correlated *because* counterexamples will not persist in the community over the long run.

A second type of answer to the same question pertains to the underlying mechanism: What mental processes *cause* the congregant to display emotions in rituals? Why do special agent rituals—when the congregant undergoes actions of the divine—come with higher emotions than special patient rituals, during which the congregant is the one doing something to the (postulated) superhuman?

My speculation—to be turned into a testable formal model in the near future—is that mental representations violating ontological expectations are not as “good” (or as “harmonic”) as the representations satisfying all constraints. Hence, the presence of counterintuitive representations triggers mental processes that we experience as the folk-notion of emotions. These mental processes, in turn, cause feelings of disgust or happiness, and lead to increased heart rate or motor hyperactivity. Maybe ontological violations create some sort of “tension”—a term to be developed into a formal model of the mind, and ideally to be identified as some feature of the brain²³—which subsequently launches psychosomatic reactions. Moreover, the agent role is more prominent than the other roles, and so the counterintuitive item fulfilling the agent role will magnify the “tension”, triggering more intensive emotions. The special status of the agent role is well-known in linguistics: agents have primacy in fulfilling the subject position in all languages of the world. An alternative explanation is related to the *Hyperactive Agent Detection Device* (Guthrie 1980, Barrett 2000): the human mind has an increased susceptibility to situations with another agent performing an action that may cause danger to me. Hence, an increased mental activity in my mind,

whenever I turn to be the patient of an action performed by a powerful, unknown agent.

Although the precise causal-mechanistic relation in the mind/brain between rituals and emotions is still an open question, empirical data are being collected regarding the different measurable aspects of emotions. Dimitris Xygalatas, working on fire-walking rituals in different countries, has observed various aspects of emotional arousal: personal phenomenological reports, observable motor hyperactivity and dehydration, the effects on the subjects' recall and interpretation of their own experiences (Xygalatas 2011), as well as objectively measured heart rate (Konvalinka, Xygalatas, et al. 2011). It has turned out that the heart rate of fire-walkers synchronized with the heart rate of related spectators, but not with unrelated bystanders. These and future data may on a longer term contribute to a better understanding of how rituals are performed, what meanings and interpretations people associate to them, how the brain processes their social context, and how the different aspects of emotions relate to the rituals.

To summarize, actions—including rituals, that is, actions with a counterintuitive agent in their structure—trigger various mental mechanisms, including emotion-related ones. Given a situation, mental computations influence the heart rate and bodily movements. They also determine the memory trace to be added to the autobiographical memory: its character and its strength (cf. the *flashbulb memory effect*), as well as the influence exerted by the memory of this event onto future decisions. A number of factors pose constraints upon these emotion-related mental mechanisms, including the rarity of the event (cf. stage fright, rites of passage, etc.), its eventual consequences (e.g., the probable reaction of other human and superhuman agents), but also the thematic structure of the event (am I doing something to others, or are others doing something to me?). The violation of ontological expectations by counterintuitive agents and other religious concepts add some sort of “tension” to the mental computations, eventually inducing more intensive emotions.

The Dynamics and Stability of Rituals-and-Emotions Systems

As a consequence of the mental computations, some rituals will be remembered and repeatedly enacted, while others will be forgotten. A faithful memory of the technical details is as important for the ritual to remain part of the religious system as is the motivation to repeat the ritual (in cognitive terms: a favourable “attitude bit” influencing action planning decisions). Note that this cognitive theory, developed with a village in Papua New Guinea in

mind, has been amended by all scholars who work with religions that are characterized by literacy and more complex social-institutional structures. So the human mind needs not remember a lengthy and rarely performed liturgy if institutions supply those minds with prayer books.

And yet, the theory may provide a novel approach to Judaism, as well. It predicts that a *balanced ritual system* contains two types of rituals: low-frequency, high-arousal special agent rituals, and high-frequency, low-arousal special patient/special instrument rituals. If special agent rituals dominate in the ritual system, then the religious practice becomes emotionally too loaded, and it breaks down. If, however, special agent rituals are missing from the system, the ritual system becomes “boring”: McCauley and Lawson call it the *tedium effect*, and this is the phenomenon the title of my chapter refers to. If a ritual system is dominated by high-frequency, hence low-emotional rituals, then this unbalanced, “tedious” system will produce *splinter-group outbursts* with high-emotional special agent rituals. The prototypical example is the cargo-cult splinter-group movement observed by Harvey Whitehouse during his field work in Papua New Guinea.

Hence, rituals and emotions form a single dynamical system, which we shall refer to as the “rituals-and-emotions system”. As discussed above, the dynamics is better understood from a teleological-evolutionary perspective than from a causal-mechanistic one. Given the state of the dynamical system at time t , what are the forces that determine the state at time $t+1$?²⁴ The tedium effect, which this article focuses on, suggests that the mind requires a certain—not too high, and not too low—level of “tension”. The presence of counterintuitive agents, especially in the agent role of actions, would provide it. Too many special agent rituals would provide too much of such a “tension”, whereas too few such rituals would not satisfy the brain’s needs.

We also must be able to explain the “splinter group outbursts” along similar lines. What happens in the brains of the charismatic leaders who come up with new special agent rituals if there are too few of them in the community? And what happens in the brains of their followers when they decide to join the new group? There may be “random fluctuations” in the human brain that suddenly create the representation of a new ritual in the innovator’s mind. The followers’ minds decide to adopt the innovation. But what are the exact processes that make them decide to adopt the new ritual? And why does the mental computation of other people in the group rather decide *not* to join the splinter-group? All these questions will hopefully be answered, once a fuller model of the human mind will be able to describe the mental representation of rituals, the emotions associated with them and the processing thereof.

The Mccauley-Lawson Theory Applied to Post-Temple Judaism

We have finally reached the main question posed in this chapter: how do Jewish rituals relate to the three dimensions of the Mccauley-Lawson theory? Jewish rituals vary enormously in terms of frequency, ranging from the *Asher yatzar* blessing recited several times a day (for example, after a visit to the toilet) to *Birkat ha-chamah*, the blessing over the Sun, recited once in twenty-eight years. Are emotions proportional to the rarity of the event? Not necessarily. I was more moved by the twenty-eight times more frequent *Neila* service in 2004 (as mentioned in an earlier section) than by the recitation of the blessing over the Sun in 2009. Is, therefore, ritual form a better predictor of the emotions, as argued for by McCauley and Lawson?

It turns out that most of the mitzvot are hardly rituals—let alone, special agent rituals—according to the definition of Lawson and McCauley. Therefore, their theory predicts the emergence of the *tedium effect*. Is the theory deficient, incomplete, or are the consequences of the tedium effect indeed discernible in the history of Judaism? This section discusses why Judaism lacks proper rituals according to this theory, and where the theory needs revision.²⁵ The next section will identify trends in Jewish history that can be interpreted as consequences of the tedium effect.

Negative commandments, such as the laws of kashrut or the prohibition of certain activities on Shabbat, are central in Jewish religious practice, but do not fit into the model. Unless we extend the original theory to “non-actions”, comparable to negated sentences in language, these are not actions, and so we cannot discuss them within the framework. This fact is certainly regrettable, because prohibitions do induce emotions and most probably contribute to maintaining the “tension” required by a rituals-and-emotions system. Future research ought to amend this aspect of the theory.

Let us turn to the positive mitzvot. Living in the sukkah is not so much an action in the narrow sense but a state. In a broader sense, however, it can fit in the model: the “action” of *living* (including *eating* and *sleeping*) has an agent-role (the observant Jew) and a location-role. Shaking the lulav is certainly an action. At first glance, these two mitzvot could be said to be special location and special instrument rituals, respectively. And yet, it is problematic to see where in their mental representation a counterintuitive agent is hidden: neither the sukkah nor the lulav have undergone special enabling rituals, as expected by the Lawson-McCauley model. Both must conform strict halakhic rules, but these are physical specifications. None of them are “consecrated” in the way religious tools are often consecrated in other religious traditions. The best I can say is that the sukkah and the lulav meet the criteria set by the

counterintuitive agent, and that is what makes them special location or special instrument rituals. There is no anterior *enabling ritual* connecting them to the divinity, but an anterior *enabling fact*, a criterion stipulated by the superhuman agent. Most positive commandments in Judaism follow the same scheme.²⁶ Rabbinical commandments introduce an extra twist: the agents stipulating the enabling facts are humans (rabbis) who satisfy another enabling fact, namely, that they are connected to the superhuman agent by a chain of ordination.

As argued above, and contrary to the opinion of Lawson and McCauley, I can see prayers as special addressee rituals. Still, in this case, we must generalize the original model of actions with agent, patient and instrument roles to other types of actions that have new thematic slots. In the case of prayers, the *speaking* action (not to confuse with *speech acts*) is an action that has an utterance role and an addressee role, alongside the agent role.

Note, however, that the inclusion of new types of actions is not a big step, once we have already acknowledged that negative commandments require the inclusion of *non-actions*, whereas many positive commandments require us to generalize from *enabling rituals* to *enabling facts*. It is only after such a revision of the model of Lawson and McCauley that we can reconstruct the full Jewish rituals-and-emotions system. Otherwise, we would exclude a large number of practices in Judaism from our approach. One may decide not to consider them rituals, which is theoretically fine, but then we will not be able to account for much of the emotions in Judaism, and the obtained rituals-and-emotions picture will be skewed.

At the same time, these revisions will not augment the number of special agent rituals. We may introduce special addressee rituals, to include prayers; special location rituals enabled by an enabling fact, to include the sukkah; non-actions with a human agent, to include prohibitions. And yet, hardly any of them will be special agent rituals. (The single exception might be the priestly blessing in the repetition of the *Amida* prayer.²⁷) To save the balance of the ritual system, many scholars would point to the rites of passage in Judaism.

Indeed, circumcision and bar mitzvah are often presented as special agent rituals, as rites of passage with the boy undergoing these rituals as the patient of the action. Lay people often consider these actions as changing the status of the patient, similarly to rites of passage in other religions. However, halakhic sources reject the idea that a baby becomes Jewish after the circumcision and a boy becomes adult due to the bar mitzvah ceremony.²⁸ Cognitive models of religions focus primarily on the intuitive representations in the mind—which in turn are related to emotions—and not on the theologically correct representations (Barrett 1999) corresponding to the halakhic sources in

Judaism. Thus, it is fair to say that these rites of passage can contribute to the emotions required by a balanced ritual system. Perhaps this is not the case with regard to the circumcision ritual performed at the age of eight days, but certainly the bar mitzvah ceremony is a once-in-life event that determines the memories and feelings of the boy for the rest of his life. But are these rituals indeed represented mentally as special agent rituals by the participants, as expected by the theory?

The *mohel* is the person who circumcises the baby—even the linguistic structure of this sentence reflects who the logical subject (the agent) and who the logical object (the patient) is. Thus, the baby is indeed the patient, and the mohel is the (supposedly special) agent. The relatively new bar mitzvah ceremony is a more complicated situation, because strictly (halakhically) speaking the bar mitzvah is not a ritual at all, but a state-of-affairs: the fact that the boy has turned thirteen and may act as a major. The ceremony itself is a *reading* action, with the boy as the agent and the Torah-scroll as the instrument—no third party involved. This is not a special agent rite of passage, but a frequently performed special instrument ritual, provided that an enabling fact has made the Torah-scroll a special instrument. And yet, as already mentioned earlier, many people (and the bar mitzvah boys are often among them) view the situation as the boy undergoing a change in status by the power of the rabbi, probably transmitted by the means of his blessing. Hence a constellation—not in the halakhically correct, but in the intuitive reading of the situation—with the rabbi acting as an agent and the bar mitzvah boy undergoing the action as a patient.

Nonetheless, for both these rituals to be special agent, we must demonstrate that the agent (the mohel, the rabbi) has been enabled, or is perceived as being enabled, to act on behalf of the counterintuitive agent. Is it really the case? A mohel is nowadays certified technically, but not ordained ritually. The chain of contemporary rabbinical ordinations does not go back to the culturally postulated superhuman agent, either. Their past learning, their knowledge, their skills, or simply their social status and the source of their salary make them a rabbi and a mohel—none of these factors can be interpreted in the Lawson-McCauley model. Probably many lay people have the intuition that rabbis, but also mohalim, are empowered by formal rituals (Malley and Barrett 2003). Yet, they would not know for sure that a chain of ordination connects the rabbis and the mohalim to the counterintuitive agent, and therefore, they cannot entertain a special agent kind of mental representation of these rituals, as proposed by Lawson and McCauley. Where do the emotions come from, then?

History of Judaism As a Constant Fight for a Balanced Ritual System

Summarizing, we can say that neither the original model of Lawson and McCauley, nor its eventual revisions and generalizations can satisfactorily explain how counterintuitive representations in the action representation system account for the necessary—not too few, not too much—“tension” in the Jewish rituals-and-emotions system. Therefore, we predict the emergence of the *tedium* in the technical sense, as explained in an earlier section. The standard reaction to the tedium effect—according to McCauley and Lawson, and based on the personal experiences of Harvey Whitehouse during his fieldwork in New Guinea—is *splinter group outburst*: the emergence of a new movement led by a single or a few charismatic leaders that introduces high-emotional special agent rituals.

As New Testament scholar Risto Uro (e.g., 2011, esp. p. 124) has argued, the emergence of Christianity can be seen as such an outburst. The introduction of baptism, a new special agent ritual, helped various second temple sects, and the Jesus-movement among them, to create a more balanced ritual system. The charismatic leaders of the splinter groups are culturally postulated to be empowered (directly) by the superhuman agent(s). Therefore, the new rituals, such as baptism, can be represented using a short chain: I am baptised by a person who has been baptised by a person baptised by Jesus. This short chain of special agent rituals certainly involves more “tension” than the rites in second temple Judaism, having very complex structures. Thus, a Passover sacrifice in the Temple would be a special patient instrument with the following representation: I [agent] eat the sacrificed lamb [patient, which is related to the counterintuitive agent because] it was sacrificed by a priest, who had a father who had a father [etc.] who had a father who was Aaron, who was consecrated by Moses, following divine orders. This representation involves a recursive structure of indefinite length (the “etc.”), and enabling facts instead of enabling rituals. Therefore, the first century charismatic movements introducing the new ritual of baptism perfectly illustrate the splinter group emergence phenomenon with “more exciting” rituals, as predicted by McCauley and Lawson.

New Testament scholar István Czachesz (2007) has demonstrated that the representation of Jesus that has finally eclipsed alternative images in mainstream Christianity is the one that corresponds to a cognitive optimum. Being too counterintuitive would impose too heavy computational load, whereas being hardly counterintuitive would not be sufficiently attracting. In sum, the success of Christianity among late antique Jews can be explained as it having found a cognitively more balanced set of rituals and representations.

Beside Christianity, other charismatic movements come immediately to one's mind, such as Shabbatai Tzvi's and others' messianic movements, as well as Hasidism. Sent by the divine, the messiah is expected to create a world with a direct link to the superhuman, thereby refilling Judaism with more "tension". False messiahs emerged whenever the need for this refilling was desperate.²⁹

Being in direct contact with the divine, the rebbe, the charismatic leader of the Hasidim, also offers a more direct link to the counterintuitive agent. The introduction of new rituals can again be observed: think of the blessings given by the rebbe, of the Hasidic *tish* (the followers eating at the rebbe's table) and of prayers at the rebbe's grave.³⁰ We can easily see that these rituals invite the Hasid to participate in an action that involves the divine within a single step. First, remember that the rebbe can directly communicate with the divine. Hence, he has been involved in a special agent *speaking* action, where the speaker is counterintuitive, and the addressee is the rebbe. Thus, the rebbe blessing a Hasid is a special agent ritual: the Hasid [the addressee] undergoes a *speaking* action whose agent has been enabled directly by the counterintuitive agent. The same applies to the *tish*, when the Hasidim receive bits of food from the rebbe's plate: they [the receivers] undergo a *giving* action whose agent has been directly enabled by the counterintuitive agent. Praying at the rebbe's grave is a special addressee ritual performed at a special location. The *tish*, the rebbe's grave and the rebbe's blessing are probably the closest situations that an average believer can ever get to the counterintuitive agent—not only in Judaism but in any religion in general. And these rituals certainly bring the Hasid much closer to the counterintuitive agent in the chain of rituals than any mainstream Jewish ritual.

Beside expecting "splinter-group" outbursts, we may also search for other forms of experiencing the divine more directly. Such an alternative is the way offered by spiritualism and mysticism.

The esoteric experience in the *heikhalot*-literature and *merkavah*-mysticism, as well as the poorly understood mystical practices by the Talmudic rabbis themselves accompany the Biblio-centric mitzvah-Judaism of the late antiquity. In the early Ashkenazic Middle Ages, the intellectual achievements of Rashi, the Tosafists or the Rosh were paralleled by the emergence of the Hasidei Ashkenaz. The *Shulchan Arukh* coincided in space and time with the naissance of the Lurianic Kabbalah, an important source of the already discussed Sabbatianism and Hasidism. Indeed, the rise of the Kabbalah from the thirteenth century onwards had certainly been another reaction to the tedium effect in mainstream Judaism. It is not a coincidence that the extreme

rationalism represented by Maimonides had a tremendous intellectual influence on a huge number of individuals, but could not really become a popular movement. The idea that a Jew must follow each of the commandments just because they have been commanded by God is a crystal-clear theological construct, but it hardly fits the action representation system in one's mind. This divergence of intellectual theology from the effects of unconscious mental setup has been already discussed as the dichotomy of *theological correctness* versus *intuitive knowledge* (Barrett and Keil 1996; Barrett 1999). The same applies to the similar approach of Yeshayahu Leibowitz, and *mutatis mutandis*, to Mordecai Kaplan's reconstructionism: intellectual Judaism may be influential on a theological level, but will lack the modes of religiosity required to launch a popular movement.

Further methods also lead to a shorter chain connecting the human agent and the counterintuitive one. The Karaites emphasised the role of the Torah text, which itself is the product of an action directly involving God. Their refusal of the rabbinic interpretation and their return to the "original meaning of the text" can thus be interpreted as seeking to reduce the chain of enabling actions to the counterintuitive agent compared to the contemporaneous gaonic Judaism.

Aggadah and folklore, throughout two millennia of Jewish history, have filled Judaism with "spirituality" and emotions to counterbalance the dry halakhic system. They offered alternative interpretations of rituals that fall closer to the intuitive forms of religiosity. Take the example of the ritual bath (mikveh): women are required to immerse in it following menstruation, whereas certain groups have the minhag (tradition) that men purify themselves regularly, for instance, before Shabbat. Thus, the halakhic construct of ritual immersion is very complex to the uneducated person, involving the cryptic menstrual impurity, as well as a distinction between men and women, between law and minhag. Now, I was told the following explanation by a non-Jewish person in charge of maintaining the old synagogue building in Makó (South-Eastern Hungary), formerly the base town of the Makover rebbe and his Hasidim: "The men went more often (weekly) to the mikveh than the women (monthly) because men were involved in trade in public and so had more opportunity to sin than women, who stayed home." Is this explanation not much more logical-sounding? It is built upon a single assumption, namely, that the ritual bath purifies someone from moral sins. The rite is therefore directly connected to interpersonal ethics, a domain beyond rituals, with implications to social cognition. Hence, this folkloristic interpretation of the ritual bath opens the door to emotions from the social sphere, which may then refill the batteries of a tedious ritual system.

In the nineteenth century, the study-centric yeshivah movement gave rise to the practice-centric mussar movement, copying thereby the balance achieved by Hasidism less than a century earlier between mystics-influenced philosophy and mystics-influenced religious practice. Coming to modern times, the reform movement, which grew out of enlightenment and philosophy, was looking for nineteenth century musical ideals and adopted organ music at its inception, and by now it has been dominated by a constant search for spirituality. Why did this rationalist movement turn into a spiritual one, if not because rationalism cannot provide the “tension” needed by a balanced religious ritual system? At the same time, Shlomo Carlebach-fan Jewish hippies, the followers of Nachman of Breslav and Lubavitchers adopting popular culture have entered the orthodox scene.

Countless examples can be added to demonstrate how the friction between two forces has constantly shaped the history of Judaism. These two forces are, to repeat ourselves, two different ways of connecting oneself to the superhuman using the commandments. On the one hand, we have a consciously formulated theology according to which the very fact that God gave the commandments to the Jewish people links the Jew to the superhuman. Yet, this seemingly very simple idea does not fit the mental structures responsible for religion, namely, the action representation system. This idea is theologically correct, but the cognitive constraints constantly fight for a different form of religion. Thus, on the other hand, the history of Judaism witnesses a constant search for forms that fit the action representation system in the human mind, and which realises a chain of enabling rituals as short as possible between the congregant and the divine.

Summary: What Are Emotions and What Role Do They Play in Rituals?

I have presented the Lawson-McCauley model of rituals (as introduced formally in their 1990 book) and applied the McCauley-Lawson theory (as discussed in their 2002 book) to Judaism. It turned out that adopting the model raises problems. Therefore one may wish to reject the whole model, as being falsified by Judaism. Instead, however, I have pointed to a number of details that should be revised in order to improve the model so that it can also accommodate Jewish rituals.

My introductory example, the *Avinu Malkenu* recited at the end of a Yom Kippur Neilah, raises another problem: this high-arousal moment is not a special agent ritual, and so it falls outside the predicted two attractor positions (high-arousal special agent rituals and low-arousal special patient/special instrument rituals)—provided that it is a ritual at all, which the authors of the

model would deny. We nevertheless would like to include this religious action within the cognitive theory of Judaism, since prayers are so central to Jewish practice. Maybe the key to the answer is that this is an action performed in order to coax a superhuman-reaction, and so the performer is willing to invest a “higher price” to guarantee the positive reaction.³¹ Thereby, he also refills his rituals-and-emotions system with the necessary “tension”.

In fact, as we have seen it, rabbinical Judaism lacks proper special agent rituals, and therefore it is predicted to display the tedium effect. Is Jewish religion saved from “boredom” by the high-arousal events that are not special agent rituals, such as a Neilah service? Do the large amount of low-arousal rituals filling up every day of the observant Jew compensate for the lack of high-arousal rituals? Are certain mitzvot represented mentally as special agent rituals, despite their representations being “halakhically incorrect”? Or is the tedium effect indeed discernible in the halakhic system, and developments all along the history of Judaism—aggadah, folklore, mysticism, Hasidism—can be viewed as responses to this “tedium” in a technical sense? The answer is probably a little bit the mixture of all of these possibilities.

Yet, the answer also needs a refinement of the concepts of the theory: beside revisiting the definition and the typology of the rituals, as discussed above, we also must be able to tell how to measure emotional arousal. McCauley and Lawson present it in a series of figures as if it were a one-dimensional quantity. But do we know what it is? As mentioned earlier, my guess is that *emotion* is a folk-psychological concept, which can be decomposed into various (related, but very different) processes. The McCauley-Lawson theory refers to emotions in a number of contexts, and it is quite probable that these contexts require slightly different aspects of the term.

First of all, emotions were used by McCauley and Lawson (2002) in order to ensure memorability, hence, the transmission of the rituals. High arousal helps remembering infrequent rituals in illiterate societies. Yet, Judaism comes with a highly literate culture. The *blessing of the sun* ritual (*Birkat ha-chamah*) occurs only once in twenty-eight years, but there is no need for arousal creating flashbulb memory traces. Written artefacts, such as a siddur or a rabbinic source can help maintain the ritual across generations (see, e.g., the end of the responsum of the Hatam Sofer, OH 56). At the same time, my arousal during *Avinu Malkenu* will not help me remember the entire text of this long prayer. Thus, the kind of emotions needed for the memorability of, prototypically, initiation rites may be irrelevant in the context of Judaism.

Second, emotions are also referred to when explaining the breakdown of excessively arousing ritual systems: a *sensory overload ceiling* stops the

intensification of this kind of unbalanced rituals systems (not discussed in the current paper). Are these dynamics related to the same aspects of emotions as the memorability of the rituals?

Third, the lack of emotions causes the *tedium effect*, the reactions to which are, supposedly, *splinter group outbursts*. But once we identify the neural-cognitive bases of emotions, are we going to find the tedium effect and the sensory overload ceiling on the two ends of the same scale? My intuition is that the sensory overload ceiling is related to the many physiological aspects of emotions: pain, excessive laughter, hunger, altered state of consciousness, heart rate, etc.³² Whereas the tedium effect is rather related to something else, to another component of the emotion phenomenology, to what I have called “tension”.

Maybe we should call it temporarily XB22, to avoid any association related to the everyday language word *tension*. Maybe, it will turn out that XB22 is the level of some enzyme in the brain; or a pattern of activation of certain neurons; or the energy level of some cells; or something else. Maybe it is an abstract concept introduced by a formal model of the mind: a parameter of the algorithm, a target function optimized by a connectionist network or a hidden component of the representation. Many disciplines have been successful only after they introduced concepts that are directly not observable: force and energy beside place and time in mechanics, social classes beside groups of people in sociology, beat and cadence beside tones in musicology, phrase structure beside word order in syntax, and so forth. Maybe XB22 is such a hidden concept needed to explain rituals.

Maybe XB22 is the neural correlate of Rudolph Otto’s *Holy*. The human brain, for some reasons unclear so far, desperately thirsts for XB22 (Psalm 42:3).

At this moment, “tension XB22” is a non-definable concept of our theory, which in turn postulates the following: (1) Humans seem to aim at a relatively high (but not too high) level of XB22. (2) Rituals increase its level, and special agent rituals increase its level more than other rituals. The shorter the chain of enabling rituals, the more of it the ritual provides. (3) On a phenomenological level, one’s amount of XB22 becomes visible as emotion-related phenomena. These three axioms reformulate the main results of the McCauley-Lawson theory, while keeping hidden what the emotion-related concept of XB22 is.

Maybe a detailed analysis of the history of Judaism will bring us closer to this mystery. But for sure, a better understanding of emotions will bring us closer to a better understanding of Judaism.

Acknowledgments

The author is grateful to the editors of this volume for inviting him, for pushing him to reconsider his research from the perspectives of the emotions, and also for countless valuable comments on the manuscript. He also acknowledges the support of various funds, including the *Netherlands Organisation for Scientific Research* (project number: 275-89-004).

Notes

- 1 See primarily the oeuvre of Daniel Boyarin, and the ensuing literature. For an evaluation of his 'new historicism', refer for instance to Schwartz 2002, 108.
- 2 See also Gereboff's discussion of the recent scholarship, including the works of Michael Fishbane, Daniel Boyarin and Hava Tirosh-Samuelson.
- 3 See Lawson and McCauley 1990 and McCauley and Lawson 2002.
- 4 For a detailed discussion and references, see Whitehouse 2004, 63ff.
- 5 Most of them are discussed in my article, which should serve as a complement to this chapter, Biró, in press, as well as in my book under preparation.
- 6 In the cognitive science of religion, see, for instance, Keijzer 2011.
- 7 "Cognition", in *Oxford Dictionaries*, at <http://oxforddictionaries.com/definition/cognition>. Oxford University Press, 2011.
- 8 Refer to the large body of literature on 'social cognition'. For various examples about how computational cognitive science can approach social phenomena, see Sun 2006.
- 9 The term "emergence" is a keyword here. Cognitive scientists do not deny social phenomena, but derive them from phenomena on an individual level. The classic analogy is the temperature of a gas in physics, which is a macro-level phenomenon, meaningless on the molecular level, and yet, derived from the average kinetic energy of the individual molecules. Similarly, social phenomena are not seen any more as macro-level primitives of the theory, but as derived notions that emerge from the micro-level interactions of a large number of individuals, each with a specific mind/brain.
- 10 On the role of the social network in the context of the cognitive science of religion, see the work of István Czachesz, for instance, 2011.
- 11 More on it in Gabriel Levy's chapter in the current volume.
- 12 Note that the same applies to the notion of 'religion', an umbrella term for certain forms of behaviour, certain beliefs, specific institutions, artefacts and a more or less well definable section of the literary canon. Such a general umbrella term did not exist in most non-Western non-modern cultures. Unlike numerous theories of religion, most scholars in the cognitive science of religion school do not aim at providing a single general definition of the term 'religion'; we rather aim at explaining separate phenomena that are together called 'religious' by the modern Western societies.
- 13 Such an "irrational" bodily reaction has a clear evolutionary advantage by guaranteeing that a substance that caused nausea in the past will not be consumed again in the future. It is irrelevant whether the person himself experienced sickness in the past, or someone else had undergone the experience, and this person has learned this piece of information from the community. Thanks to cultural learning and its effects similar to personal learning, each of us need not undergo all possible unpleasant situations. As a by-product, we obtain "irrational" bodily reactions even in the case of food taboos that are culturally acquired

and the external observer would know that the food does not cause sickness in other cultures.

- 14 Here I allude to the distinction frequently made in the cognitive science of religion literature between *theologically correct* forms of religious concepts, as opposed to their *intuitive* forms; see Barrett 1999. The former are more complex, requiring the violation of cognitive constraints, and therefore, available to the believer subjects only “when one is slowly and carefully reflecting on one’s knowledge” (338). The latter are used by the same subjects in experimental tasks with greater processing demands. They conform to the cognitive constraints, and therefore the mind can process them more easily, probably in a faster, automatized way. Thus, the distinction between the two types of observable forms reveals some secrets of the mental operations.
- 15 Remember that most Jewish services do not petition for such direct consequences. Unquestionably, a person praying for a sick relative or a Hasid awaiting the coming of the Messiah would be similarly moved. Yet, most of Jewish liturgy is recited for the sake of being recited, without petitions at all, or with extremely general petitions, which many congregants simply cannot relate to. For a distinction between *human-action-only* rituals and *superhuman-reaction* rituals, and the explanation of their different emotional dynamics, see Biró 2011.
- 16 See Martin 2003; cited by Saler 2009, 46. Martin quotes Guthrie 1980, 181.
- 17 A slightly more technical and detailed introduction to the same topic is Biró, in press. The reader is encouraged to study the two chapters in parallel, since they significantly complement each other.
- 18 Here I skip over certain linguistic details to keep the terminology standardly used in the cognitive science of religion.
- 19 See also Tamás Biró, “Sacrifice in mind and language: A preliminary cross-linguistic survey,” in preparation.
- 20 At this point, I would like to express my thanks to Risto Uro for fruitful discussion and suggestions.
- 21 If a counterintuitive agent is present in more slots, then we take into account the one that has the shorter “enabling chain”. For more details, see McCauley and Lawson 2002, 33f.
- 22 Many textbooks of statistical mechanics provide good introductions to dynamical system theory and attractors. A less technical introduction—focusing on cognition, culture and society—is Mainzer 1997. The classical reference from a philosophy of science perspective is of course still Prigogine and Stengers 1986.
- 23 The word *tension* must not be understood either as a physical concept, or as a vague metaphor, but as a well-defined technical term in the model. In the first case, I would make unjustifiable ontological claims about the brain, since I cannot know yet what the postulated notion corresponds to. In the second one, I would rely on the reader’s subjective understanding of the word, losing thereby the chance to connect it one day to objectively demonstrable brain structures.
- 24 Biró 2011 presents a preliminary attempt to give an answer. Note also that McCauley and Lawson (2002) discuss the role of “growing and widespread preoccupation with theological and intellectual concerns among participants in a religious system. The resulting arrangements involve [...] drastically diminished levels of sensory pageantry associated with these systems’ non-repeated, special agent rituals” (208). Although sharing their intuitions, I certainly expect future generations of cognitive scholars to work out the details of the mechanisms “resulting” in the described “arrangements”. Thus the top-down approach

initiated by McCauley and Lawson may dig deeper and meet with bottom-up approaches, as described in the introduction.

- 25 A more elaborate paper on this issue, substantially complementing the current chapter, is Biró, in press.
- 26 Further examples are discussed by Biró, in press.
- 27 See the detailed discussion of the priestly blessing in Biró, in press.
- 28 The newborn baby is Jewish if born from a Jewish mother, and this is why he must be circumcised on the eighth day. The baby remains Jewish even if he is not circumcised for whatever reason. A boy becomes legally adult the day after he turns thirteen, independently of whether he gives a party, reads from the Torah scroll and receives a blessing.
- 29 In the terminology of the McCauley-Lawson theory, false messiahs can be viewed as the perturbations induced by the tedium effect in the stable stage of unbalanced systems (McCauley and Lawson 2002, 185).
- 30 Some of these rituals also exist in non-Hassidic groups, especially in the Sephardic folk-religion under Kabbalistic influence. There, the same train of thought can be repeated: alternative (charismatic-imagistic) forms of religion are developed in order to counter the “tedium” characterizing mainstream (routinized-doctrinal) religiosity.
- 31 Biró, “Optimal Religion”.
- 32 Classical examples are the ethnographies of Harvey Whitehouse and Dimitris Xygalatas.

Bibliography

- Barrett, J. L. 1999. “Theological Correctness: Cognitive Constraint and the Study of Religion.” *Method & Theory in the Study of Religion* 11, 4: 325–339.
- . 2000. “Exploring the natural foundations of religion.” *Trends in Cognitive Sciences* 4, 1: 29–34.
- Barrett, J. L., and Keil, F. C. 1996. “Conceptualizing a Non-Natural Entity: Anthropomorphism in God Concept.” *Cognitive Psychology* 31: 219–247.
- Biró, T. 2011. “Optimal Religion: Optimality Theory Accounts for Ritual Dynamics.” In *Changing Minds: Religion and Cognition Through the Ages*, edited by I. Czachesz and T. Biró, 155–191. Leuven: Peeters.
- . In press. “Is Judaism Boring? On the lack of counterintuitive agents in Jewish rituals.” In *Mind, Morality, and Magic: Cognitive Science Approaches in Biblical Studies*, edited by I. Czachesz and R. Uro. London: Equinox.
- Boyer, P. 1994. *The Naturalness of Religious Ideas: A Cognitive Theory of Religion*. Berkeley: University of California Press.
- . 2001. *Religion Explained: The Human Instincts that Fashion Gods, Spirits and Ancestors*. London: Vintage.
- Clark, A. 1997. *Being There: Putting Brain, Body and Word Together Again*. Cambridge, MA: MIT Press.
- Czachesz, I. 2007. “Early Christian Views on Jesus’ Resurrection: Toward a Cognitive Psychological Interpretation.” *Nederlands Theologisch Tijdschrift* 61: 47–59.
- . 2011. “Women, Charity and Mobility in Early Christianity: Weak Links and the Historical Transformation of Religions.” In *Changing Minds: Religion and Cognition Through the Ages*, edited by I. Czachesz and T. Biró, 129–154. Leuven: Peeters.
- Damasio, A. 2003. *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*. Orlando: Harcourt, Inc.

- Gereboff, J. 2008. "Judaism." In *The Oxford Handbook of Religion and Emotion*, edited by J. Corrigan, 95–110. Oxford: Oxford University Press, 95–110.
- Guthrie, S. E. 1980. "A cognitive theory of religion." *Current Anthropology* 21, 2, 181–203.
- Kazen, T. 2011. *Emotions in Biblical Law: A Cognitive Science Approach*. Sheffield: Sheffield Phoenix Press.
- Keijzer, F. 2011. "Meaningful Meaning: Changing Relations between Science and Religion." In *Changing Minds: Religion and Cognition Through the Ages*, edited by I. Czachesz and T. Biró, 53–73. Leuven: Peeters.
- Konvalinka, I., D. Xygalatas et al. 2011. "Synchronized arousal between performers and related spectators in a fire-walking ritual." *PNAS* 108, 20: 8514–8519.
- Lawson, E. T., and R. N. McCauley. 1990. *Rethinking Religion: Connecting Cognition and Culture*. Cambridge: Cambridge University Press.
- Lindquist, K. A. et al. 2012. "The Brain Basis of Emotions: A Meta-Analytic Review." *Behavioral and Brain Sciences*. 35, 3: 121–143.
- Ludwig, A. M. 1968. "Altered States of Consciousness." In *Trance and Possession States*, edited by P. Prince, 69–95. Montreal: R.M. Bucke Memorial Society.
- Martin, L. 2003. "Cognition, society and religion: A new approach to the study of culture." *Culture and Religion* 4, 2: 207–231.
- Mainzer, K. 1997. *Thinking in Complexity: The Complex Dynamics of Matter, Mind, and Mankind*. Berlin: Springer, 3rd revised and enlarged edition.
- Malley, B., and J. Barrett. 2003. "Can Ritual Form be Predicted from Religious Belief? A Test of the Lawson-McCauley Hypotheses." *Journal of Ritual Studies* 17, 2: 1–14.
- McCauley, R. N., and E. T. Lawson. 2002. *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms*. Cambridge: Cambridge University Press.
- Prigogine, I. and I. Stengers. 1986. *La nouvelle alliance: Métamorphose de la science*. Paris: Gallimard.
- Saler, B. 2009. "Anthropomorphism and animism: On Steward E. Guthrie, *Faces in the Clouds* (1993)." In *Contemporary Theories of Religion: A Critical Companion*, edited by M. Strausberg, 39–52. London: Routledge.
- Schwartz, S. 2002. "Historiography on the Jews in the 'Talmudic Period' (70–640 CE)." In *The Oxford Handbook of Jewish Studies*, edited by M. Goodman, 79–114. Oxford: Oxford University Press.
- Stausberg, M., ed. 2009. *Contemporary Theories of Religion: A Critical Companion*. London: Routledge.
- Sun, R. 2006. *Cognition and Multi-Agent Interaction: From Cognitive Modeling to Social Simulation*. Cambridge: Cambridge University Press.
- Tinbergen, N. 1963. "On Aims and Methods of Ethology." *Zeitschrift für Tierpsychologie* 20, 4: 410–433.
- Uro, R. 2011. "Towards a Cognitive History of Early Christian Rituals." In *Changing Minds: Religion and Cognition Through the Ages*, edited by I. Czachesz and T. Biró, 109–127. Leuven: Peeters.
- Whitehouse, H. 1995. *Inside the Cult: Religious Innovation and Transmission in Papua New Guinea*. Oxford: Oxford University Press.
- . 2004. *Modes of Religiosity: A Cognitive Theory of Religious Transmission*. Walnut Creek: Altamira Press.

Xygalatas, D. 2011. "Firewalking in the Balkans: High-arousal rituals and memory." In *Changing Minds: Religion and Cognition Through the Ages*, edited by I. Czachesz and T. Biró, 193–209. Leuven: Peeters.