Harvey Whitehouse is one of the leading anthropologists and one of the co-founders of the research field called the cognitive science of religion (CSR) and is a tenured professor at the University of Oxford. He is one of those scholars who have dedicated a big part of their careers to the cumulative development of one theory. In his case, it is the modes of religiosity theory, which he outlined in three previous books (Whitehouse, 1995, 2000, 2004) and numerous articles and book chapters. This also applies to his most recent book, which follows a long 17-year gap since the last one. However, it is needless to assume that this is to be a tedious repetition. On the contrary, it is an engaging, thought-provoking and rich investigation that combines psychological experiments, ethnography, big-data mining, historical and archaeological data and computer modelling. Compared to *Modes of Religiosity* (Whitehouse, 2004), *The Ritual Animal* is, in a sense, also a picture of how the discipline of CSR has changed over the past 15–20 years, moving from cognitivist theorizing and the first shy experiments to fully blown multidisciplinary and methodological diverse endeavours. In this respect, *The Ritual Animal* is a synthesis of the work of not just Harvey Whitehouse but also a wider group of his collaborators. Those who have followed his work on a regular basis will hardly be surprised. On the other hand, 15 years ago, one only had to follow the work of some 30 or so scholars to have an almost complete picture of what was going on in CSR. Today, something like that is virtually impossible. Synthesizing the works of concrete research programmes is, therefore, both essential and refreshing.

I think Whitehouse's theory is relatively known even outside of CSR but, for the sake of this review, I will briefly outline its main claim, namely that the cross-cultural variability of collective rituals is not arbitrary but tends to cluster around two divergent positions: highly arousing (mostly dysphoric) but not so often performed rituals and frequent and emotionally rather flat rituals. The former ritual mode is typical of the so-called *imaginistic mode*, which is also associated with episodic memories, individually generated meanings, passive or absent leadership, intense social cohesion, small scale, noncentralized structure and low degree of uniformity, while the latter mode is typical of the *doctrinal mode*, which, in contrast, relies on semantic schemes and socially learned ritual meanings, high levels of uniformity, centralized structure and diffuse social cohesion, to mention some of the main psychological and socio-political features of the divergent modes. The crucial point of the theory is not just the existence of these two modes but its claim to predict the transition between these two modes. For instance, one such prediction is dealing with imagistic splinter groups that emerge within doctrinal religions, which, under the right conditions, are later reintegrated.

A major focus is pointed towards predictions of the theory, which relate to historical increases in population size. The theory argues that the scale of cooperation under the imagistic mode is limited by the size of the ritually bonded groups, while the doctrinal mode enables much wider forms of cooperation both in size and variety. This connects the modes theory to human social evolution and the growth of social complexity of human societies associated. Using historical and archaeological evidence, Whitehouse shows that the Neolithic rise of agriculture was accompanied by the emergence of rituals with doctrinal features.
(Chapter 3) or that social changes during what is the so-called Axial Age are related to the increasing dominance of doctrinal religions with moralistic norms (Chapter 4).

Although the parts of the book that bring evidence in support of various predictions of the modes of religiosity theory offer numerous methodological inspirations on how to test anthropological theories using historical data or computer modelling, for me, these were the less interesting or thought-provoking parts. I think that the most interesting parts of the book represent those that further elaborate on the original theory. This is the case foremost when Whitehouse extends his focus from the ritual form dichotomy and its consequences for the social organization to underpinning mechanisms of group bonding. With this, Whitehouse joins the general trend of the last decade within CSR – the quest to explain the puzzle of human cooperation and sociality with the role religion and rituals could play. With some satisfaction, I have to say that Whitehouse wisely avoids jumping on the functionalist wave currently raging in the field.

Whitehouse argues that there are two contrasting forms of affiliation with a group: fusion and identification. Fusion with the group is established by emotionally intense experiences that reflect the situation when individual identity is merged with the group identity. Contrary to fusion, identification is a form of depersonalized group alignment that relies on shared traits and semantic schemas. In the context of the modes of religiosity theory, identity fusion is typical for the imagistic mode and is mediated by the emotionally intense ritual experience, while identification is typical for the doctrinal mode, whose routinized and frequent rituals enable detection of deviation from a collective norm and hence enable group markers to be socially learned and standardized across larger populations.

Both forms can lead to strong pro-group motivations, but they do it in different ways, create different forms of social organization and stem from different forms of social experience. By exploring sets of activities as diverse as hazing rituals, team sports and armed combat, Whitehouse shows how extreme experiences essential to the autobiographical self, when shared with others, can be group-defining. Such an identity can then produce motivations for extreme pro-group behaviours like self-sacrifice.

Another new and important extension of the original theory is the elaboration on the different epigenetic effects of the divergent modes on human cognition and their feedback on social cultural evolutionary and dynamics (Chapter 5).

In the last two chapters, Whitehouse makes an unusual and ambitious proposal. He offers knowledge about human society, accumulated under the research covered by the modes theory, to be applied and further developed to help devise solutions for various problems in academia and the global world. Formation of group identities, ingroup cohesion and commitment, shared ideologies, diverse forms of cooperation and social structures, and their evolution in historical contexts, both in their positive but also darker outcomes, should, according to Whitehouse, be used to make a better world. To avoid conflicts, populism or problems of the ever-rising population, etc., lessons from the past can be extracted. I am not sure whether Whitehouse’s suggestions are realistic, exaggerated or naive, but regardless of

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1 This includes the so-called Seshat: Global History Databank, a large, international, multidisciplinary team of evolutionary scientists, historians, anthropologists, archaeologists, economists and other social scientists (https://seshatdatabase.info/). In this context, it should be noted that there was also a certain controversy when one of the analyses based on this database triggered a harsh reaction of some scholars, that eventually led to a retraction of the article (https://www.nature.com/articles/s41586-019-1043-4).
that, I commend the idea that social scientists, psychologists, anthropologists, historians and archaeologists and their research should be much more actively proposed to be used for public benefit.

Most of my attention was attracted to the first chapter of this book, which defines a slightly new paradigm for the study of rituals, and frames the whole book but also stands apart from it with rather general claims linked to the study of ritual regardless of the modes of religiosity theory. Therefore, I will dedicate a bit more space to it in this review than to other parts of the book. It stems from a productive collaboration between Harvey Whitehouse and psychologist Cristine Legare (Texas University) (e.g. Legare, Wen, Herrmann, Whitehouse, 2015) and several other researchers on imitative learning.2

One of the broadly accepted definitional features of rituals is that they are causally opaque and goal demoted. This means that, unlike ordinary behaviour, the causal effect of the components of a ritual and their ordering cannot be inferred from rituals themselves, nor can it be inferred whether the ascribed effect has been achieved. Whitehouse and Legare build on this and claim that this ritual feature stems from the process of cultural learning, which from others is facilitated by two psychological systems, two cognitive stances which are applied when learning instrumental skills vs. learning cultural conventions: instrumental stance, an interpretative mode for actions based on physical causation, and ritual stance, an interpretative mode for actions based on cultural convention. The key difference between them is not merely the presence of causal opacity but the interpretation of the opacity and from it stemming over-imitation. While in the instrumental stance, the physical causal basis of action is in principle knowable, even if it is currently unknown, in the ritual stance, the rationale is not in principle knowable from the perspective of physical causality.

But, why is it necessary to call this stance ritualistic? Why not, for example, normative, social or convention stance? In several places, Whitehouse indicates that this social heuristic for copying others is not only present in ritual over-imitation but generally in social norms, customs or anything that fits the umbrella term of tradition. I am confident that this way of reasoning about over-imitation does not exclusively apply to the imitation of behaviour but also the adoption of ideas and beliefs. For instance, Dan Sperber, many years ago (1996), argued that people are capable of adopting concepts and ideas that they do not understand to some degree or not at all. He calls them half-understood concepts (Sperber, 1996). There may be several reasons why people adopt half-understood concepts, but one of the most common is probably the situation of novice learners. As with causally opaque behaviours, some of them are in principle understandable (instrumental stance). However, many half-understood

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2 Foremost Patricia Herrmann, Rachel Watson-Jones and Paul L. Harris, see also Rohan Kapitany and Veronika Rybanska.
concepts are not understood by anyone nor seek to be understood; nevertheless, their cultural transmission is perpetuated by the metarepresentation of their social context and their public reproduction is pure convention.

I would dare to argue that what is here labelled as the ritual stance, and referred to as the socially conventional understanding of actions, is just one particular heuristic of how to compensate for various types of uncertainties or ambiguities that arise in social learning, while the others might be the social context biases, like conformist bias and prestige bias (Richerson, Boyd, 2005), which can be seen to have both an instrumental dimension (to adopt the best variant of a cultural item) and a social dimension (to choose a proper strategy for social affiliation).

Let me speculate a bit further. Several authors, including Whitehouse (Kavanagh, Jong, Whitehouse, 2020), argue that collective rituals are something akin to social technologies of cooperation. This is also the main idea of this special issue of Slovenský národopis / Slovak Ethnology, which attends to rituals as instruments of social regulation. This brings me to the question of why a heuristic that seeks to justify action based on social convention (the ritual stance) could not be at the same time instrumental, seeking out the rationale for actions based on causation, even though here I mean social causation. It is argued that participation in collective rituals is effectively (instrumentally?) used for affiliation, bonding, social inclusion (but also segregation), as signals of commitment or credibility-enhancing displays and so forth. In addition, a large proportion of causal inferences is based on individual learning and experience, which opens up another area of instrumental understanding of rituals. For instance, the experience of emotional states induced by various aspects of rituals, such as the experience of belonging to a group, the endorphin high induced by behavioural synchrony or the alleviation of anxiety through repetitive behaviours, to name a few, can lead people to very clear representations of cause and effect that can motivate participation in rituals or their reproduction in a very instrumental way. This is not meant to be a straw man argument. I know that the proponents of the instrumental/ritual stance distinction or others who just define rituals with causal opacity, are all referring specifically to the physical causal opacity of ritual actions. I just wonder whether the introduction of the above-mentioned stance terminology, while clarifying a lot, is not obscuring something else. I mean that when the theory extends the physical causal characterizations of ritual actions towards the psychology of social conventions, it should make a full step toward social inferences, which also can be oriented to causation or convention, or both.

Overall, I believe that The Ritual Animal is a robust and thoughtful contribution to the research of collective ritual that offers many inspiring ideas even for researchers who are not convinced by Whitehouse’s overall theory.

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VERONIKA RYBANSKA:
The Impact of Ritual on Child Cognition

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Veronika Rybanska is a social and cognitive anthropologist whose work focuses on the anthropology of children. The author graduated in social anthropology at Comenius University in Bratislava and subsequently completed her PhD at the Institute of Cognitive and Evolutionary Anthropology, University of Oxford, UK.

Her book *The Impact of Ritual on Child Cognition* explores the link between ritualized activities, executive functions, and delayed gratification. It relies on a longitudinal cross-cultural experimental design comparing groups of children in Slovakia and Vanuatu. The book is intended for the professional reader, but due to the detailed explanation of the theories and research underlying her own research, it may also be of interest to students. On a theoretical level, Rybanska’s work links the fields of cognitive science of religion and developmental studies, while on a methodological level it combines anthropological research with experimental design.

The book is divided into six chapters. After an introductory chapter, the following chapters are devoted to key variables: ritual (2), executive function (4), and delayed gratification (5). Chapter two introduces the two ethnographic sites. The last chapter summarizes the results. The text presents a detailed review of research from anthropology, psychology, and neuroscience on ritual and the development of children’s psychological capacities, followed by the author’s own empirical data which it contextualizes within the presented paradigms.