

# Cognitive and Evolutionary Inspirations in the Study of Religion with Emphasis on the Development of Ethnology and Sociocultural Anthropology in Slovakia



Spoznavni in evolucijski navdihi pri študiju religije  
s poudarkom na razvoju etnologije in sociokulturne  
antropologije na Slovaškem

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## ABSTRACT

The cognitive and evolutionary approach to the research of religion in cultural and social anthropology has been systematically developing since the 1990s and the first decade of the 21<sup>st</sup> century. At the end of the 1990s, cognitive and evolutionary theories of religion began to be applied in the research of religion by a narrow group of ethnologists, religionists, and anthropologists in Slovakia. This paper aims to provide a basic overview of the fundamental concepts of cognitive and evolutionary anthropology of religion. It focuses on selected scholars whose works and ideas are considered pivotal in the development of this field. The second objective is to outline how cognitive and evolutionary theories of religion have been reflected in ethnology and sociocultural anthropology in Slovakia.

KEYWORDS: religion, ritual, cognitive and evolutionary science of religion, Slovakia

V socialni in kulturni antropologiji se kognitivni in evolucijski pristop do raziskovanja religij sistematično razvija od devetdesetih let 20. stoletja in prvega desetletja 21. stoletja. Ozka skupina etnologov, religiologov in antropologov je na Slovaškem ob koncu devetdesetih let začela uporabljati kognitivne in evolucijske teorije religije pri raziskovanju religije. Namen tega prispevka je podati pregled temeljnih konceptov kognitivne in evolucijske antropologije religije. Osredotoča se na dela in ideje strokovnjakov, ki veljajo za ključna pri razvoju tega področja. Drugi cilj prispevka je predstaviti, kako se kognitivne in evolucijske teorije religije odražajo v etnologiji in socialni in kulturni antropologiji na Slovaškem.

KLJUČNE BESEDE: religija, ritual, kognitivna in evolucijska znanost o religiji, Slovaška

## INTRODUCTION<sup>1</sup>

Religion has been the focus of anthropologists for decades, with many theories attempting to explain its numerous aspects. A cognitive and evolutionary approach to the study of religion began to develop in the 1970s and was influenced by the second cognitive revolution. The cognitive and evolutionary science of religion, from this point onwards also referred to as CESR, has provided compelling new insights into the research of religion (for an overview, see Atran 1999, 2004; Bloch 1998; Boyer 2001; D'Andrade 1995; Whitehouse 2021; Xygalatas 2022). This paper aims to provide a basic overview of the fundamental concepts of CESR. I will focus on selected scholars whose works and ideas are considered pivotal in the development of this field. Although this may entail the risk of omitting specific papers, books, or research, I aim to highlight the broader general trends in the development of CESR by using specific research interests as examples. The second objective is to outline how cognitive and evolutionary theories of religion have been reflected in ethnology and sociocultural anthropology in Slovakia. I will focus not only on empirical research in which these theories are applied but also on studies reflecting the theoretical and methodological aspects of cognitive and evolutionary approaches to the study of religion.

## AN OVERVIEW OF THE COGNITIVE AND EVOLUTIONARY INSPIRATIONS IN THE STUDY OF RELIGION

Cognitive science began to focus more closely on religion in the second half of the 1970s. This interest was sparked by developments in psychology, computer sciences, and cognitive science. A fundamental role in this development was played by the work of linguist Noam Chomsky. Chomsky's concept of generative grammar, syntactic structures, and the critique of behaviourism in psychology played a critical role in the development of the the-

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ory, methodology, and epistemology of the social sciences and humanities (Chomsky 1957, 1959). Chomsky's work has demonstrated that scientific study can encompass more than just observable entities or activities – i.e. more than stimuli and subsequent reactions. Within the realm of religious research, this means that the object of study need not be limited to external descriptions and interpretations of rituals, magical practices, religious pilgrimages, or worldviews. Focusing primarily on external descriptions of observed phenomena provided by research participants or generated by researchers was predominant in most anthropological research during this period, and to some extent still is today (for a further general critique of such an approach in sociocultural anthropology, see Bloch 1998; Boyer 1990; D'Andrade 1995 or Shore 1996). On the other hand, the attention of researchers was slowly shifting towards the systems of meanings and symbols shared by members of specific societies. Additionally, scientists began to focus on the outcomes of the interactions of the human mind, which was viewed as a complex instrument whose structure relates to the acquisition of language and culture, with the outside world. To summarise, because of this development anthropologists have gradually begun to focus on the interaction of the mind (evolved psychological and cognitive mechanisms, tendencies, and subsequent behaviour), culture and environment (social and ecological). Subsequently, the object of interest has also shifted towards different ways in which our mind processes diverse inputs from the outside world (Bloch 1998; Boyer 2001; Bužeková, Jerotijević and Kanovský 2011; D'Andrade 1995; Kanovský 2002a, 2002b; Shore 1996).

Stewart Guthrie, one of the pioneers in this area of research, is inclined to the generally accepted view that the cognitive science of religion did not begin to develop systematically until the 1970s when the first theories and methodological approaches were established. However, he goes on to add that the ethnographic foundations can be traced back to the second half of the 20<sup>th</sup> century, and the philosophical foundations date back even further to thinkers such as Benedict de Spinoza (1632–1677), David Hume (1711–1766), and Robin Horton (1932–2019) (Guthrie 2013). The philosophical origins of the cognitive science of religion can thus be traced as far back as the philosophical debates about the nature of knowledge and cognition taking place in the 17<sup>th</sup> century.

Before the advance of the cognitive and evolutionary study of religion, the study of religion in sociocultural anthropology focused on all that makes religion specific and “different” from the profane realm and everyday existence: mystical states, rituals, belief in supernatural entities, possession, astral travel, religious sacrifices, magic, etc. (Bloch 1998; Boyer 1990; D'Andrade 1995 or Shore 1996). However, from the perspective of CESR, religion is a result of standard psychological mechanisms working in both religious and non-religious contexts. These mechanisms are part of human psychology, developed over time through biological and cultural evolution and coevolutionary processes – known as culture and gene coevolution (Boyd and Richerson 1985; Boyer 2001; Henrich 2015). These mechanisms and tendencies are a standard part of the psychology of every healthy individual. This means that religion is not a unique form of human behaviour different from a whole plethora of other kinds of human behaviour or phenomenon *sui generis*, as previously

believed by social scientists. Instead, religious phenomena are the result of the same psychological mechanisms as all other forms of human behaviour. This perspective provides a fresh and compelling angle on one of the longest-standing areas of research in ethnology and sociocultural anthropology (e.g. Boyer 2001; Whitehouse 2021; Xygalatas 2012, 2022).

In recent decades the study of religion has been revitalised by a surge in interdisciplinary work (for a general overview, see Whitehouse 2021; Xygalatas 2022). In the cognitive and evolutionary sciences of religion, this interdisciplinary work can roughly be divided into two main areas: cognitive studies and behavioural approaches. The former, Soler (2012) argues, focuses on the acquisition and transfer of religious concepts as by-products of other cognitive abilities (e.g. Barrett 2004; Boyer 1994, 2001; Guthrie 1993; Lawson and McCauley 1990; McCauley and Lawson 2002). A second group of researchers have been more concerned with adaptive explanations that focus, for example, on the relationship between ritual and prosociality, which I will address below (e.g. Bulbulia 2004; Soler 2012: 346; Sosis 2003, 2004; Sosis and Alcorta 2003; Sosis and Ruffle 2003). The second approach is closely associated with the notion of religion being the result of evolution by natural selection. As Boyer and Bergstrom argue, while such a research agenda is of more recent date, its germs can be seen in the work of the ‘father’ of evolutionary theory through natural selection, Charles Darwin (1809–1882) (Boyer and Bergstrom 2008: 112; Darwin 1871; Purzycki and Sosis 2009).

Following on from the previous paragraph, understanding the selection pressures that have shaped the human mind and body throughout biological and cultural evolution is also essential within CESR. An important question is whether religion is a by-product of other psychological mechanisms or an adaptation. Depending on the answer, we can divide researchers into two imaginary camps. Joseph Bulbulia refers to the first group as *spandrelists* (religion has no adaptive value *per se*) and the latter as *adaptationists* (religion is a functional mechanism and can be best explained as the target of natural selection) (Boyer and Bergstrom 2008; Bulbulia 2004: 656; Kundt 2015; Purzycki et al. 2022; Purzycki and Sosis 2023). The matter at hand is of utmost importance to CESR and cannot be considered resolved (e.g. Sosis 2009).

In explaining cultural phenomena such as religion, cognitive and evolutionary anthropologists consider the cultural, social, historical, economic, and ecological context. However, equally important is how our minds process information and what psychological and cognitive mechanisms are involved in this processing. They pay systematic attention to the aspects of cultural transmission and learning connected to memory (Bužeková 2018). In this type of research, emphasis is placed on understanding how information is acquired, stored, and recalled. The distinction between long-term and short-term, semantic and episodic memory and their role in the rituals and the acquisition of knowledge about religion is central to many contemporary cognitive and evolutionary approaches to religion (e.g. Boyer 2009; Boyer and Wertsch 2009; Whitehouse 2000, 2002, 2004, 2021; Xygalatas 2022).

The field of CESR combines the theoretical and methodological approaches of the humanities, social sciences, and natural sciences. The research carried out by CESR encompasses various methods, including controlled laboratory experiments using modern technologies, field experiments, and long-term stationary ethnographic research. Qualitative methods such

as ethnographic interview and participant observation, along with experimental, psychological, and statistical methods are employed with the aim of the most comprehensive understanding of religion (for an overview, see Jerotijević 2012, 2013; Kundtová Klocová 2014; Xygalatas 2013).

Cognitive scientist of religion Ilkka Pyysiäinen, echoing cognitive anthropologist Pascal Boyer, argues that although theories about religious phenomena can be developed, it is perhaps impossible to develop a theory (my emphasis added) of religion as a whole (Pyysiäinen 2012: 5–6). The first wave of evolutionary and cognitive anthropologists of religion, whose works will be considered below, focused on creating scientific theories explaining phenomena such as magic, the transmission of supernatural ideas, rituals, or modes of religious behaviour (e.g. Atran 1999, 2004; Barrett 2004; Boyer 2001; Guthrie 1993; Whitehouse 2004). The general idea of constructing an all-encompassing theory of religion is often-times rejected by cognitive and evolutionary theorists of religion (Pyysiäinen 2012: 5–6).

Finally, representatives of classical cultural evolutionism in anthropology, such as Edward B. Tylor (1832–1917), James George Frazer (1854–1941), John Lubbock (1834–1913), Max Muller (1823–1900), or Robert R. Marret (1866–1943), sought to find the first hypothetical form of religion, or lack thereof, and its point of origin in the course of human history (Stocking 1968, 1987). In terms of the idea of unilinear evolution, they created hypothetical models of the evolution of religion based on the idea of progress and advancement towards increasingly complex forms of it (Kundt 2015). Contemporary CESR scholars do not seek to find the first exact form of religion, as had been the case in earlier anthropological theories. As Boyer and Bergstrom point out, most contemporary evolutionary approaches to religion avoid speculation about archaic forms of religious behaviour and experience (Boyer and Bergstrom 2008: 113). More often they postulate insightful partial theories explaining specific aspects of religion, from which empirically testable hypotheses can be derived. Last but not least, the methodology and theoretical assumptions of the current CESR theories are fundamentally different from the works of classical evolutionists, and even though researchers avoid unfounded speculations about the original forms of religious behaviour, this does not mean that there is not a scientifically rigorous and well-founded effort to find the antecedents of religious behaviour (e.g. Lang and Kundt 2023).

#### THE FIRST WAVE OF THE COGNITIVE AND EVOLUTIONARY SCIENCE OF RELIGION

The first cognitive and evolutionary theories of religion started to develop at the end of the 20<sup>th</sup> and in the first decade of the 21<sup>st</sup> century (Atran 1999, 2004; Boyer 1994, 2001; Guthrie 1993; Lawson and McCauley 1990; McCauley and Lawson 2002; Sperber 1975, 1985, 1996). In the following section, I will outline the approaches of just a few selected scholars whose work can be considered milestones, illustrate broader trends in research, and have spurred further exploration in these areas.

Stewart Guthrie conceived one of the first cognitive approaches to the study of religion (Guthrie 1993). Guthrie explored ideas regarding the relationship between anthro-

pomorphism and the supernatural. Because we as humans tend to anthropomorphise the world around us, it could be argued that religious phenomena can be understood best as systematic anthropomorphism. Given the uncertainties of the world, it becomes convenient – also potentially advantageous from an evolutionary perspective – to attribute intention (agency) to natural phenomena as well. Religious entities are therefore often characterised by human-like attributes, be they physical or mental (Guthrie 1993).

Thomas Lawson and Robert McCauley's pioneering works (Lawson and McCauley 1990; McCauley and Lawson 2002) were the first to offer a cognitive theory of religious rituals. They explained the frequency and cultural forms of these rituals in terms of implicit cognitive processes that are released by either dramatic or repeated practices. According to their theory of rituals, humans have certain intuitions about the structure and efficacy of a given ritual, which they possess naturally. These intuitions or implicit expectations persist even in the absence of explicit instruction, as evidenced by people's readiness to participate in and learn ritual activities (Jerotijević and Maño 2014: 142–143). Despite the focus on cognitive processes, the social and cultural aspects of rituals are not ignored. Cognitive and evolutionary anthropologists are inspired by Durkheim's view of collective religious rituals as a tool for social integration, cohesion, and the maintenance of cooperation. Contemporary evolutionary studies of ritual have shown that participation in religious rituals promotes cooperation and prosociality. I will return to the topic of rituals, prosocial behaviour, and cooperation in more detail in the subsequent sections.

Dan Sperber's work has been instrumental in shaping the broader theoretical foundations of cognitive and evolutionary approaches to the study of religion. In the 1970s, Sperber raised a fundamental critique regarding the interpretive and symbolic approaches in anthropology, which at the time constituted the dominant theoretical platform (Sperber 1975). As Jerotijević and Maño say, Sperber argued in favour of the notion that cultural phenomena, including religion, cannot be fully explained without an explanation of the cognitive mechanisms that are causally linked to them. In this way, he set himself apart from schools of thought that understood cultural institutions, including religion, as *sui generis* phenomena. This idea appears already in the work of sociologist Émile Durkheim, who saw religion as a *sui generis* social fact (Durkheim 1995 [1915]). However, according to Sperber, it is not possible to perceive religion as a *sui generis* phenomenon and consequently treat it as an *explanans* of other macro phenomena (Jerotijević and Maño 2014: 142).

Sperber is known for developing the concept of the epidemiology of representations inspired by the field of epidemiology, which analyses the distribution, and all the underlying processes and determinants, of diseases in a population (Sperber 1985, 1996). Sperber therefore proposed a research program aimed at how and why certain kinds of mental representations become widespread more easily than others in human populations (Pyysiäinen 2012: 6.) Sperber's theory does not address the existence of concrete representations, i.e. specific cultural phenomena, but as Bahna says, it defines in general terms the ontological and epistemological conditions for the transmission of any ideas and beliefs (Bahna 2019: 11).

As discussed above, from the perspective of cognitive and evolutionary approaches to religion, human minds process information from the environment in the form of mental representations or beliefs.<sup>2</sup> Sperber distinguishes two basic types of such representations. The first are intuitive representations that are the result of spontaneous and unconscious inferential and perceptual processes. On the one hand, intuitive beliefs are based on the processing of information coming from the environment – social, cultural, or ecological. On the other hand, reflective representations, or the so-called meta-representations, are based solely on what is mediated by communication (Sperber 1996 as cited in Bužeková 2009: 26). Supernatural concepts (religious concepts) in terms of Sperber's approach, represent reflexive representations, thus, when taking a stance towards them, an evaluative context should be important – in particular, verification of the context and source of information about supernatural concepts and their credibility (Bužeková 2009: 30). This means that in taking a stance towards reflective beliefs, who is giving the information and on what occasion plays a crucial role. From this perspective, supernatural conceptions disseminated during rituals (e.g. a Christian mass) by a religious expert (e.g. a Christian pastor) have more credibility for a member of the Christian religion than the same conceptions disseminated in a different context – e.g. overheard from an unknown person while travelling on public transport. In addition, Sperber also distinguishes between mental and public representations, which he argues collectively constitute culture. On the one hand, mental representations constitute ideas, beliefs, preferences, etc. and are mental states in the minds of individuals. On the other hand, he defines public representations as external signals, statements, texts, behaviours, artefacts, etc. that we produce based on mental representations (Bužeková 2009; Kanovský 2011; Sperber 1996 as cited in Bahna 2019: 11).

Pascal Boyer expanded upon Sperber's ideas and established significant theoretical, methodological, and epistemological foundations for the CESR. Boyer's early works focused on themes such as approaches to the research of tradition in anthropological studies, religious expertise, and the transmission of supernatural ideas, among others (Boyer 1990, 1994, 2001). Many other scholars have since expanded on these themes following Boyer's ideas. His work brought about significant changes in the understanding of the concept of tradition in anthropological and ethnological practice. Boyer points out that terms such as tradition are often used intuitively in anthropological writings without deeper definitions or with definitions that are insufficient or tautological. He highlights that these terms present important problems that should be explained by considering cognitive and psychological processes (Bužeková 2011: 99; Tužinská 2006: 34; Uhrin 2019).

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This statement pertains mainly to the first wave of CESR researchers, whose concepts are discussed in this section. These researchers operated within the representationalist framework. However, some contemporary approaches do not necessarily operate within this framework. Instead, they utilise approaches such as 4E cognition (embodied, embedded, enactive, and extended cognition – see, for example, Geertz 2010; Geertz and Kundtová Klocová 2019) or a predictive processing approach (see, for example, Andersen 2017; Schjoedt and Andersen 2017; van Elk and Aleman 2017), and thus they overcome several shortcomings of the first CESR theories. I would like to thank the anonymous reviewers who pointed out the need to clarify this part of the text.



For many cognitive and evolutionary theories of religion, including Boyer's approach, an important distinction lies between the different types of memory activated during different types of religious rituals and activities (e.g. Boyer 2009; Boyer and Wertsch 2009). Harvey Whitehouse's theory of two modes of religiosity is a concrete example of this approach. According to Whitehouse, we can distinguish two modes of religiosity, namely the imagistic mode and the doctrinal mode. Concrete religions and ritual systems then more or less approximate one of them, with different types of memory being activated in these systems (Whitehouse 2000, 2002, 2004, 2009, 2021). The imagistic mode is predominated by episodic memory, in which personal memories are encoded in the form of distinctive episodes – thus, they are more likely to be specific memories of specific events. Information in this type of long-term memory is embedded in memories of specific situations and linked to the personal identity of the bearer. Examples of this include intense ritual experiences in the form of physically and psychologically demanding extreme rituals or emotionally charged initiation or rites of passage. The doctrinal mode is governed by semantic memory, which stores information about the world (social, cultural, ecological, etc.) through memorisation and the creation of memory schemas. In this mode, information about ritual and religion is stored in semantic memory as general knowledge (Hampejs and Chalupa 2014: 27; Jerotijević and Maňo 2014: 147). Frequently repeated rituals are typical for the doctrinal mode. Rituals and practices closer to this mode are characterised by repetitiveness, routinisation, and the existence of religious experts enforcing participation in rituals and overseeing their uniformity. An illustrative example is the Christian Sunday service or the Islamic daily prayer.

While religious rituals and practices approaching the imagistic mode are characterised by a high degree of physical, psychological, and emotional arousal, practices approaching the doctrinal mode are characterised by the so-called *tedium effect*. It means that performing rituals in doctrinal mode can cause the automatic and routinised performance of ritual activities. These may include, for example, standing up, kneeling, blessing, reciting, and chanting biblical texts, and ritualised responses to acts performed by religious experts during a Christian weekly worship service. This form of ritual can lose its appeal to participants, leading to low participation in frequently repeated rituals, especially those performed on a daily or weekly basis. For this reason, religious authorities oversee the correctness and uniformity of the practices performed and may even try to enforce participation in rituals (Jerotijević and Maňo 2014: 147; Whitehouse 2009: 214). Such enforcement is also documented by ethnographic research on religion carried out in Slovakia (Uhrin 2018: 45).

In this section, I have presented only selected fundamental approaches from the first generation of CESR scholars. This overview does not reflect the current state of CESR's immense methodological and theoretical breadth. To summarise, the approaches from the first wave include the epidemiology of representation (Dan Sperber), animism and anthropomorphism (Stewart Guthrie), ritual representations (E. Thomas Lawson and Robert N. McCauley), modes of religiosity (Harvey Whitehouse), counterintuitive ideas (Pascal Boyer) and the hyperactive agency detection device (Justin Barrett – which I haven't addressed due to lack of space) (Geertz 2020: 367–368).



Many concepts considered significant in the 1990s and early 2000s, including those referred to above, have later undergone crucial refinement and change. Although CESR is a relatively young theoretical and methodological approach, it is nevertheless rapidly and dynamically advancing. There were significant advancements made in the past three decades, both empirically and theoretically. The research scope of the current wave of CESR scholars is much broader, studying diverse aspects of religiosity such as morality and moral behaviour, atheism, gender, power relations, death and the dead, pilgrimage, embodiment and ritual, and much more (for an overview, see Geertz 2020; Martin and Wiebe 2017; White 2021). While the situation within CESR since the 1990s was characterised by fast progress in both theoretical and methodological terms, the situation in Slovakia was different. As we will see, research on religion from a cognitive and evolutionary perspective developed differently for several reasons.

### COGNITIVE AND EVOLUTIONARY SCIENCE OF RELIGION IN SLOVAKIA

Research on religion has not always received systematic attention in Slovak ethnology, and religion, in the sense of one of the great institutionalised religions, has not been the main topic of ethnographers' research. From the 17<sup>th</sup> and 18<sup>th</sup> centuries onwards, in the early stages of ethnographic scholarship, researchers focused on manifestations of "folk religiosity", such as ideas about supernatural beings, superstitions, magical ideas and practices, etc. (for more details, see Bužeková 2009, 2019; Bahna 2019; Hlôšková 2008; Urbancová 1987). In the second half of the 20<sup>th</sup> century, the absence of research on religion was undoubtedly also due to the political regime of the time and the ideology attached to it. As the Slovak ethnologist Zuzana Beňušková explains, after the Second World War, the topic of religion was rather avoided, and although one cannot speak explicitly about the tabooing of the topic, information was "hidden" in contexts of different research topics (Beňušková 2004: 5). Since the 1950s municipal and regional monographs have been published. Despite the minutiae analysis of the diverse manifestations of Slovak folk culture, these monographs mostly lack systematic information on religious life or interfaith relations in the rural environment. I am not suggesting complete neglect, but rather pointing to the absence of systematic research on religion by ethnographic methods in the rural environment until the 1990s (Uhrin 2019).

After the fall of the communist bloc, there was an increase in research on religion in Slovakia in the fields of ethnology and sociocultural anthropology. Since the 1990s, many important publications, synthetic works and articles have been produced about religion. However, researchers faced a difficult challenge as there was little previous research to build upon. Previous research was scarce and varied in quality, as well as in methodological foundations (Beňušková 2004: 4–6) and lacked theoretical background. During this period, scholars mainly focused on precise descriptions, categorisations, and analyses of empirical phenomena. This resulted in a lack of theoretical explanatory frameworks. The insufficiency of theoretical and methodological reasoning in ethnology has been pointed out by sever-

al scholars, including social anthropologist Martin Kanovský, whose works I will discuss below (Kanovský 1998, 2004; see also Boyer 2003, 2011; Bužeková 2009, 2019; Uhrin 2019).

During the 1990s, scientific research in Slovakia saw the introduction of theoretical concepts developed in sociocultural anthropology in Western countries. However, there was no predominant theoretical or methodological approach during this time. I believe that the reason for this is the relatively small number of ethnologists and sociocultural anthropologists in Slovakia and the considerable theoretical diversity entering the former communist bloc countries from the Western scientific traditions in the 1990s. One of the approaches that has emerged in the study of religion in Slovakia since the late 1990s is the cognitive and evolutionary approach.

Cognitive sciences were established in Slovakia towards the end of the 20<sup>th</sup> century. This establishment was done through computer science, psychology, philosophy, linguistics, anthropology, and ethnology (Beňušková, Kvasnička and Pospíchal 2000; Rybár, Beňušková and Kvasnička 2002). At this time, a small group of ethnologists, anthropologists, and religious scholars in Slovakia started to delve into the concepts of cognitive and evolutionary sciences.<sup>3</sup> One of the pioneers in the CESR field in Slovakia, and the first who was concerned with their application in the ethnographic research of religion was the social anthropologist Martin Kanovský. Among the first proof of this interest is a paper in which Kanovský applies cognitive theories on data drawn from the literature relating to the semantics of Australian Aboriginal religion and its cognitive foundations (Kanovský 1999; also Uhrin 2018, 2019).

In subsequent works, Kanovský analyses the ethnographic material collected during ethnographic field research. Inspired by Boyer's work, he focuses on cognitive explanations of the distribution of some supernatural ideas in the White Carpathian Mountain region in Slovakia (Kanovský 2002a). Drawing on Sperber's conception, he addresses the following research question: why are some sets of supernatural ideas more widespread and remembered than others? This is one of the classic questions in CESR, which has received a considerable amount of attention. In recent years, the term supernatural ideas or entities has been replaced by the term minimally counter-intuitive agents (Hampejs and Chalupa 2014: 29), but only in some specific theoretical frameworks. The counter-intuitiveness refers to the notion that these agents somehow violate our mind's intuitive expectations / intuitive ontology related to psychology, biology, or physics (Boyer 1996). An example of a violation of intuitive expectations might be an inanimate object capable of speaking and thinking, which our minds do not intuitively assume to have these properties – a talking boulder, for example. Another example might be an animal capable of acting in some aspects like a

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Before proceeding any further and addressing the specific works of Slovak scholars, I want to say that I will not go into a detailed explanation of the premises of the cognitive and evolutionary anthropology of religion. A basic outline was given in the previous section. Therefore, I will limit myself exclusively to the characterisation of those terms and concepts employed in the data interpretation. For a more detailed characterisation of the cognitive and evolutionary approach, see, for example, the works of the following scholars: Bahna (2008, 2015a, 2015b), Bužeková (2003, 2004, 2009, 2011), Hampejs and Chalupa (2014), Hrustič (2003); Jerotijević (2013, 2015), Jerotijević and Maňo (2014), Kanovský (1999, 2002a, 2002b, 2011), Lang (2014) or Tužinská (2006).

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human, or a human being able to fly on its own. Similar examples of violations of intuitive expectations abound in supernatural religious ideas throughout the world. Nevertheless, it should be noted that some CESR scholars are critical of the usefulness of the original minimal counter-intuitive theory (for discussion, see Purzycki and Willard 2016).

In 2011 Kanovský reflects on his original article mentioned above, refining the various postulates and assumptions as well as the results of his analysis. He does so considering the latest theoretical findings in the field of the cognitive science of religion (Kanovský 2011: 7–21). In the abovementioned article, Kanovský follows Boyer in saying that successfully transmitted religious ideas from one generation to the next must inevitably meet at least two criteria. First, they must be relatively easily remembered by the human mind – the so-called attention-grabbing potential. Second, the idea must be integrated with other ideas and usable to explain events, whether natural or social – the so-called inferential potential (Kanovský 2011: 8–9). However, Kanovský and Boyer, along with many others, acknowledge that other conditions must be met for the successful transmission of supernatural ideas. They also note that, in addition to cognitive factors, the dissemination of supernatural ideas is influenced by social, cultural, historical, ecological, economic, and other factors. Boyer goes on to show, as Kanovský says, that all religious ideas are effectively a combination of two elements. First, they somehow violate intuitive expectations about the object of that idea. Second, these ideas have great inferential, that is, explanatory potential (Kanovský 2011: 8–9). In ethnographic research, these theoretical predictions can then be tested on specific sets of supernatural ideas. Supernatural ideas spontaneously transmitted in a population are likely to meet these two abovementioned conditions, among others.<sup>4</sup> Kanovský also argues that it is not enough just to prove that supernatural concepts meet these criteria. It must also be shown that supernatural concepts meeting these criteria are more widespread in a particular population than others. This last condition was often absent, according to him, not only in early CESR work around the world but also in Slovakia.

I believe that the first article by Kanovský is important because it presents some fundamental theories of cognitive anthropology and deals directly with their application and testing in ethnographic research in the rural environment in Slovakia. We can likewise say that this paper, and all other following works in this strand of research, effectively demonstrate the applicability of cognitive and evolutionary theories of religion in ethnographic research – either as a starting point from which hypotheses were formulated or as an interpretive framework (e.g. Bužeková 2009).

Following Kanovský's work, scholars have applied cognitive and evolutionary theories to research topics such as magic and supernatural harm (Jerotijević 2011, 2013), witchcraft, supernatural beliefs, and supernatural harm (Bahna 2008; Bužeková 2003, 2004,

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It should be pointed out that religions also contain representations that have little inferential potential and a large degree of violation of intuitive expectations. However, these ideas rarely spread spontaneously, and their spread is largely conditioned by 1) dissemination through religious experts and during religious rituals, and 2) the existence of scriptures and religious texts in which these ideas are explained.

2009), neo-shamanism (Bužeková 2011, 2023), and ritual (Bahna 2022a, 2022b; Bahna and Talmont-Kaminski 2022; Jerotijević and Maňo 2014; Maňo and Xygalatas 2022; Mentel 2022a, 2022b). In the early days of cognitive and evolutionary research of religion, however, attention was paid mainly to two interrelated themes: 1) cognitive research of supernatural ideas and how they violate innate intuitive expectations, 2) ideas of supernatural harm and the topic of magical thinking. To a lesser extent, research also focused on cognitive aspects of the coexistence of spontaneously transmitted non-institutionalised forms of religion and institutionalised doctrinal forms of religion (Bahna 2019: 10). Several scholars have also paid attention to the theoretical and methodological aspects of this line of research (e.g. Hrustič 2003; Tužinská 2006). This reflection and analysis are significant because they presented the basic postulates of cognitive anthropology and Boyer's conception to a broader audience of ethnologists and sociocultural anthropologists in Slovakia.

Tatiana Bužeková has investigated various subtopics concerning cognitive and evolutionary theories of religion. For instance, in her research on Neo-Shamanism (urban shamanism), Bužeková applies Boyer's concept of traditional discourse to analyse the types of authority of leaders in urban Neo-Shamanic groups. However, she also examines gender stratification and the dynamics of gender relations in the context of Neo-Shamanism (Bužeková 2011, 2015, 2023). She also addresses the issue of religious expertise in the context of the coexistence of supernatural and religious ideas, in the context of Christianity in rural Slovakia (Bužeková 2009, 2021). In these works, she develops the idea that in every society's official organised religion, there are ideas that contain supernatural elements that are not part of the official religion. However, the relationship between these supernatural elements and the dominant religion can vary depending on social and historical conditions. The explanation for this phenomenon may lie in the characteristics of human thought and in the way our memory functions (Bužeková 2021: 78–79). Laypeople, unlike religious experts, do not verify the consistency of supernatural ideas and official religious doctrine. This may be due, among other factors, to the different ways of acquiring knowledge about official doctrine and the different types of memory, episodic and semantic, in which this information is stored – we can recall that these ideas were also developed in Harvey Whitehouse's theory of two modes of religiosity (Bužeková 2003, 2004, 2021; also Bahna 2008; Uhrin 2018, 2019).

Another thematic area in Bužeková's work concerns witchcraft and supernatural harm in the rural environment in Slovakia. Bužeková has presented the results of many years of ethnographic research conducted in the White Carpathian Mountains in a seminal publication that has contributed to understanding not only the cognitive and evolutionary aspects of accusations of witchcraft and supernatural harm but also their social and cultural dimensions (Bužeková 2009). In her book, Bužeková mentions that her goal is not to confirm any hypotheses that might have arisen from the cognitive theories of religion. Rather, she intends to interpret the ethnographic material from the perspective of cognitive anthropology and draw partial conclusions that might encourage further research on the topic of witchcraft (Bužeková 2009: 8–9). The results presented by Bužeková support the widespread idea that accusations of witchcraft and supernatural harm reflect social tensions and conflicts. The

author's interest in the topics of magic and witchcraft is evident in her later book, which provides a comprehensive overview of the history of research on magic and witchcraft in worldwide sociocultural anthropology, as well as ethnography in Slovakia (Bužeková 2019).

One of the prominent researchers in Slovakia, who focuses on the study of magic and supernatural harm, is social anthropologist Danijela Jerotijević. She employs selected evolutionary, cognitive, and psychological theories of religion in her research on supernatural harm, magic and witchcraft. She attempts to demonstrate that magical practices that aim to harm someone, like the evil eye, rely on common psychological mechanisms and may be a by-product of their work. Jerotijević emphasizes that her explanatory model primarily focuses on the principles that affect the functioning of magical practices and not just on their content (Jerotijević 2011: 22–74, 2013: 27–43, 2015: 161–175). For a long time, the dominant research approach in Slovak ethnology focused mainly on the content, symbolic aspects, and cataloguing of magical practices and ideas. In contrast, cognitive and evolutionary directions seek not only to give detailed descriptions of specific social and cultural phenomena but also to explain how the mechanisms (psychological, cognitive, evolutionary, social, or cultural) that influence their transmission, acquisition, credibility, or memorability work.

Social anthropologist Vladimír Bahna is another representative of the CESR approach among Slovak scholars. In his book from 2019, he focuses on narratives of personal experiences with supernatural entities in which the narrator is also a protagonist of the story, and which reflect his memories. Bahna presents ethnographic material collected mainly in the Upper Kysuce region in the northwest of Slovakia. The core of the ethnographic data in the book consists of narratives of encounters with supernatural beings, which were presented as personal experiences. The publication also focuses on supernatural representations coexisting with the established 'official' Christian religion – one of CESR's classic areas of research (Bahna 2019). The underlying theoretical approach in the book is Dan Sperber's epidemiology of representation (Bahna 2019: 11). However, Bahna employs other cognitive theories of religion, as well as concepts derived from cognitive narratology, cognitive psychology, and evolutionary psychology, creating a comprehensive explanatory framework.

As I stated in a review of this book, Bahna's aim is not only to map the repertoire of a supernatural experience in a particular region. That is, his intention is not simply to conduct ethnographic empirical research, and subsequent categorisation, cataloguing, and follow-up analysis. He aims to investigate a certain cultural phenomenon in the context of knowledge about the functioning of the human mind. Moreover, by focusing attention on the theme of personal experiences and unexpected encounters with the supernatural, it fills a certain gap. So far, no systematic attention has been paid to this topic from the perspective of cognitive and evolutionary sciences in Slovakia (Uhrin 2021: 105–107).

The works mentioned so far illustrate a broader trend of research focusing on "superstitions" or "folk religiosity". According to Vladimír Bahna, this is a consequence of the fact that the central cognitive theories of religion mentioned above are based on knowledge of the spontaneous and intuitive mechanisms of the mind. They are also applied, according to Bahna, primarily, though not exclusively, in research of non-institutionalised or non-literal forms

of religion. This is why, in his view, the focus on “folk religiosity” in the early days of cognitive and evolutionary research on religion in Slovakia is both natural and logical (Bahna 2019: 10).

However, the Slovak researchers mentioned above have shown innovative thinking by combining cognitive and classical anthropological theories in the study of religion. For example, both Bužeková and Jerotijević combined the classical study of witchcraft, magic and magical harm, inspired by J. G. Frazer, E. E. Evans-Pritchard or M. Douglas, with current cognitive theories of religion and psychological theories related to magic, and magical thinking, essentialist reasoning or emotions, among others (Bužeková 2009; Jerotijević 2011, 2013, 2015). Also, Vladimír Bahna combined the approaches of the cognitive science of religion and cognitive narratology in the research of narratives of encounters with supernatural beings presented as personal experiences. He argues that such integration of theoretical concepts is plausible because “cognitive narratology and cognitive science of religion often build on similar evolutionary starting points.” (Bahna 2019: 18–19).

The presented research topics are not the only ones that scholars in Slovakia have been creatively exploring. In addition to these, they have also been looking into the coexistence of supernatural beliefs and official religion, the interaction between religious experts and laypersons, religious expertise, narrative folklore from the perspective of cognitive theories, alternative spirituality, collective rituals, gender, memory and several other topics. In some ways, this line of research is like that conducted by CESR scholars abroad, but it also expands into new areas of inquiry. It can be said that in several cases Slovak researchers have gone beyond the established cognitive theories of religion and have actively incorporated psychological findings to draw theoretical implications for the study of culture. I believe that it could even be argued that these researchers have expanded the scope of research beyond the mainstream of CESR.

I also believe that these works, as well as many others in this research direction in Slovakia, are a great demonstration of how CESR approaches can bring new explanatory insights to classical topics such as magic and supernatural harm, and religious expertise, which have been addressed by doyens of sociocultural anthropology such as James George Frazer, Marcel Mauss, Edward Evan Evans-Pritchard or Mary Douglas, among many others. Although critical of the previous theoretical and methodological approaches of classic sociocultural anthropologist and ethnologists, contemporary researchers have drawn inspiration from their works in multiple ways. This also applies to the study of rituals and ritualisation which constitutes another of the main research themes in CESR. These have also received considerable attention from Slovak scholars, and I will address them in the subsequent section.

#### RITUALS FROM THE EVOLUTIONARY AND COGNITIVE PERSPECTIVE

Ritual is one of the classic and most researched topics in ethnology, sociocultural anthropology, religious studies, sociology, and psychology. Religious rituals have been a popular topic of research in sociocultural anthropology since the pioneering work of French sociologist

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Émile Durkheim (1995 [1915]). Over the years, they have been studied from different theoretical perspectives, ranging from early theories of cultural evolution, structuralism, and symbolic anthropology to contemporary approaches (Bell 1997). In the 1950s, symbolic and cognitive theories of rituals began to develop in anthropology as researchers shifted from studying institutional behaviour to studying 'idea systems' or 'symbolic systems' (D'Andrade 1995: 12). The underlying assumption is that the human mind comprises cognitive and psychological processes built by natural selection to solve the adaptive problems faced by our ancestors. Sociocultural phenomena, including rituals, cannot be comprehensively explained without considering these psychological mechanisms that underlie human behaviour. However, the explanation must always consider the specific cultural context (Boyer 2001; Sperber 1975, 1996). The focus on cognitive processes did not mean that the cultural and social aspects of rituals were ignored: quite the contrary, in general, cognitive and evolutionary anthropologists have been inspired by Durkheim's view of collective religious rituals as a tool for social integration, cohesion, and the maintenance of cooperation.

It has been argued that religion plays an important role in the evolution and functioning of cooperation. Durkheim and other classics concerned with ritual such as Victor Turner (1995 [1969]) or Roy Rappaport (1999), among others, understood the function of religion in society differently to a degree. However, they more or less agreed that religion and participation in rituals promote cooperation, prosociality, moral behaviour in people, and the willingness to help or sacrifice for the benefit of others. These ideas are also reflected in contemporary cognitive and evolutionary theories of religion. However, they are developed in a more sophisticated form. Durkheim's notion has been reflected in evolutionary studies that have shown that participation in religious rituals promotes cooperation and prosociality. Through participation, individuals signal to other group members a commitment to group membership, adherence to group norms, and willingness to cooperate and contribute to activities beneficial to the group, and also signal (communicate) their honesty and trustworthiness (Bulbulia 2004; Henrich 2009; Power 2016; Sosis 2003; Sosis and Alcorta 2003; Whitehouse 2021; Xygalatas 2022).

Another important concept fundamentally influencing the study of rituals in CESR is the costly signalling theory. Since Charles Darwin introduced his theory of evolution through natural and sexual selection, signalling has been a key subject of research in ethology and biology (Darwin 1859, 1871; Ridley 2007; Zahavi 1975; Zahavi and Zahavi 1997) but also in sociocultural anthropology and CESR (e.g. Henrich 2009; Irons 2001; Lang and Kundt 2020; Sosis 2004; Sosis and Alcorta 2003; Xygalatas 2022). The costly signalling theory assumes that some types of behaviour are so costly that it would be disadvantageous to perform them without sharing the norms, attitudes, and beliefs of the group that holds them (Jerotijević and Maño 2014: 156; Zahavi and Zahavi 1997). Ritual participation can be seen as a type of signalling, and the signals are divided into those with high frequency and low cost, and those with low frequency and high cost. The costs can represent different forms of capital, including physical, financial, material, social, and cultural, being spent during ritual or capital foregone. However, the form of cost and frequency of rituals depend



on the religious context. In Christianity, for example, attending a Sunday service mass is a low-cost, high-frequency signal, while a full-fledged religious pilgrimage to Santiago de Compostela is a low-frequency, high-cost signal (Chvaja et al. 2023; Uhrin and Bužeková 2022;). Significant attention has also been paid to extreme rituals, usually low frequency and high cost types of rituals, which are characterised by a significant degree of physical, psychological, and emotional strain, and may represent an intense experience of fear and pain and are characterised by intense discomfort. Typical components of extreme rituals may include exposing oneself to the extreme cold or walking on fire, starving oneself, piercing body parts with needles and hooks, or performing other potentially health-threatening activities (Maňo 2019; Maňo and Xygalatas 2022; Xygalatas 2012, 2022). The question that arises in this context is how the act of participating in rituals is interpreted by their performers and onlookers, and what potential benefits their performance brings to those who perform them. It is important to understand what qualities and intentions are conveyed and communicated by the performer through their participation, and how to ensure that these signals are credible and honest communicative acts.

Various researchers from Slovakia researching rituals have adopted a cognitive approach and evolutionary anthropological theories and tried to answer many of the above-mentioned research questions (Bahna 2022a; Bahna and Talmont-Kaminski 2022; Maňo and Xygalatas 2022; Mentel 2022a, 2022b; Uhrin and Bužeková 2022). Slovak researchers were part of international research teams that studied the ritual practices on the island of Mauritius. The island is known for its costly extreme religious rituals and ceremonies – e.g. *Thaipusam Kavadi*, *Maha Shivaratri* and the *Ganesh Chaturthi* (e.g. Maňo and Xygalatas 2022; Xygalatas et al. 2021). One example may be the research focused on signalling and social status in the ritual of *Thaipusam Kavadi*. In this study, the collective of authors focused on the intensity of signalling by examining how socioeconomic status affects the cost of religious signals and investigated whether participants of different socioeconomic statuses would assume differential costs (Xygalatas et al. 2021: 525). The authors concluded that socio-economic factors play a crucial role in determining the form and intensity of signalling across different modalities in the context of the *Thaipusam Kavadi* on the island of Mauritius (Xygalatas et al. 2021: 529).

Another example is a study by Maňo and Xygalatas that focused on ritual exegesis. The authors explored the relationship between ritual costs and the perception of ritual efficacy. They assumed that the costlier rituals would be considered more adequate for addressing important problems in the lives of research participants. They found out that their respondents consider some ritual practices better and more effective than others for addressing major problems. Further, according to their research certain ritual practices are believed to be more effective in tackling significant life issues than others. These practices typically involve greater financial, physical, emotional, and opportunity investments/costs, and participating in them is often more binding – if it is based on a promise given to the deity (Maňo and Xygalatas 2022: 88). These results suggest that people may find more costly rituals to be more effective means to achieve goals than less costly ones in particular contexts.

A signalling approach to the study of rituals has also been implemented by Bužeková and Uhrin, who examined the role of rituals in the recruitment of new members into a religious community in the specific sociocultural circumstances of a village in western Slovakia. They claim that even low-cost and high-frequency signals can be perceived as trustworthy signals that communicate the intention to become a member of the group, the willingness to invest resources in activities beneficial for the group, or the willingness to comply with religious and local norms (Uhrin and Bužeková 2022). Another example of cognitive and evolutionary research on ritual by Slovak researchers is the work of Andrej Mentel. In his ethnographic case study from 2022, he compared the ritual practice of three confessional communities in contemporary Bosnia – Sunni Muslims, Roman Catholics, and Sufi dervishes. These communities implement different degrees of synchronisation and rhythmic activities in their ritual practice. Mentel states that the group with the most synchronisation of body movements during their rituals would have the highest in-group solidarity (Mentel 2022a: 228–233).

## CONCLUSION

A vast amount of empirical and theoretical work has been written in recent decades examining religion and ritual from every conceivable theoretical and methodological perspective. Since about the 1990s, the cognitive and evolutionary study of religion has slowly been developing. The last few decades have seen a boom in the cognitive, evolutionary and naturalistic study of religion, magic, mythology, and ritual. From this perspective, researchers pay attention to the laws of functioning and mechanisms of the human mind and the selection pressures that have shaped them during the evolution of the human species. In addition, they consider cultural, social, historical, economic or ecological aspects in scientific research on religion in equal measure. Cognitive and evolutionary approaches do not form the dominant trends in ethnology and anthropology whether abroad or in Slovakia. Nevertheless, they have captured the attention of a narrow group of scholars who apply them to a diverse range of topics.

In this paper, I did not intend to provide a comprehensive account of evolutionary and cognitive approaches to the study of religion. This is because the scope of such a goal is quite vast. Instead, I aimed to briefly introduce the general postulates of the first wave of cognitive and evolutionary theories of religion and highlight the work of selected scholars. Additionally, I wanted to show that these theories are reflected by a narrow group of ethnologists and sociocultural anthropologists in Slovakia, who expanded upon them in many creative ways. To conclude, I would like to paraphrase Vladimír Bahna, who states that at the beginning of the development of CESR, the interested researcher only had to follow the work of some thirty or so scholars – I have referenced the works of several of them in the paper – to have an almost complete picture of the theoretical and methodological advancements in the field. Today, Bahna continues, something like that is virtually impossible (Bahna 2022b: 305). Due to its multidisciplinary nature, CESR is a dynamic and rapidly developing field, bringing new impulses to the classic topic of scientific inquiry. CESR rep-

resents just one contemporary approach to the study of religion. However, I hope this text encourages scholars to explore its theoretical and methodological aspects further.

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## CITED REFERENCES

- Andersen, Marc 2017 'Predictive Coding in Agency Detection.' *Religion, Brain & Behavior* 9(1): 65–84. DOI: 10.1080/2153599X.2017.1387170.
- Atran, Scott 1999 *Cognitive Foundations of Natural History*. Cambridge: Cambridge University Press.
- 2004 *In Gods We Trust. The Evolutionary Landscape of Religion*. Oxford: Oxford University Press.
- Bahna, Vladimír 2008 'Čo s poverami alebo kde sú hranice kategórii?' *Etnologické rozpravy* XV(1): 11–24.
- 2015a 'Kognitívny a evolučný prístup šírenia konšpiračných teórií.' *Slovenský národopis* 63(3): 195–206.
- 2015b 'Explaining Vampirism: Two Divergent Attactors of Dead Human Concepts.' *Journal of Cognition and Culture* 15(3–4): 285–298. DOI: 10.1163/15685373-12342151.
- 2019 *Nadprirodzené skúsenosti a naratívna myseľ: Sociálna nákazlivosť spomienok*. Bratislava: VEDA, Ústav etnológie a sociálnej antropológie.
- 2022a 'Cultural Group Selection and the Russian Old Believers. Adaptive and Maladaptive Outcomes of the Group-Cohesive Effects of Religion.' *Slovenský národopis* 70(2): 248–272.
- 2022b 'Harvey Whitehouse: The Ritual Animal. Imitation and Cohesion in the Evolution of Social Complexity.' *Slovenský národopis* 70(2): 305–309.
- Bahna, Vladimír and Konrad Talmont-Kaminski 2022 'Rituals Kneaded with Societies, Societies Kneaded with Rituals.' *Slovenský národopis* 70(2): 176–185.
- Barrett, Justin 2004 *Why Would Anyone Believe in God?* Berkeley: Altamira Press.
- Bell, Catherine 1997 *Ritual: Perspective and Dimensions*. New York: Oxford University.
- Beňušková, Ľubica, Vladimír Kvasnička and Jiří Pospíchal, eds. 2000 *Hľadanie spoločného jazyka v kognitívnych vedách*. Bratislava: Iris.
- Beňušková, Zuzana 2004 *Religiozita a medzikonfesné vzťahy v lokálnom spoločenstve*. Bratislava: Ústav etnológie SAV.
- Bloch, Maurice 1998 *How We Think They Think: Anthropological Approaches to Cognition, Memory, and Literacy*. Oxford: Westview Press.
- Boyd, Robert and Peter J. Richerson 1985 *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Boyer, Pascal 1990 *Tradition as Truth and Communication: A Cognitive Description of Traditional Discourse*. Cambridge: Cambridge University Press.
- 1994 *The Naturalness of Religious Ideas: A Cognitive Theory of Religion*. Berkeley: University of California Press.
- 1996 'What Makes Anthropomorphism Natural: Intuitive Ontology and Cultural Representations.' *The Journal of the Royal Anthropological Institute* 2(1): 83–97.
- 2001 *Religion Explained*. New York: Basic Books.
- 2003 'Science, Erudition and Relevant Connections.' *Journal of Cognition and Culture* 3(4): 344–358.
- 2009 'What Are Memories For? Functions of Recall in Cognition and Culture.' In: *Memory in Mind and Culture*. Pascal Boyer and James V. Wertsch, eds. New York: Cambridge University Press. Pp. 3–28. DOI: 10.1017/CBO9780511626999.002.
- 2011 'From Studious Irrelevancy to Consilient Knowledge: Modes of Scholarship and Cultural Anthropology.' In: *Creating Consilience: Evolution, Cognitive Science, and the Humanities*. Edward Slingerland and Mark Collard, eds. Oxford: Oxford University Press. Pp. 113–129.
- Boyer, Pascal and Brian Bergstrom 2008 'Evolutionary Perspectives on Religion.' *Annual Review of Anthropology* 37: 111–130. DOI: 10.1146/annurev.anthro.37.081407.085201.

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- Boyer, Pascal and James V. Wertsch, eds. 2009 *Memory in Mind and Culture*. New York: Cambridge University Press.
- Bulbulia, Joseph 2004 'The Cognitive and Evolutionary Psychology of Religion.' *Biol Philos* 19: 655–686.
- Bužeková, Tatiana 2003 'Kognitívne aspekty koexistencie náboženskej doktríny a pover: Racionalita reflektívnych presvedčení.' *Etnologické rozpravy* 10(2): 54–64.
- 2004 'Kognitívne aspekty koexistencie kresťanských a poverových predstáv: Na príklade vysvetlenia negatívnych udalostí v slovenských poverových rozprávaniach.' *Slovenský národopis* 52(2): 140–162.
- 2009 *Nepriateľ zvnútra*. Bratislava: Veda.
- 2011 'Tradícia a experti: Legitimizácia neošamanských praktík.' In: *Kognitívne vysvetlenie magických predstáv a praktík*. Tatiana Bužeková, Danijela Jerotijević and Martin Kanovský, eds. Bratislava: ETERNA Press. Pp. 75–130.
- 2015 'Sacred Femininity and Authority: Gender Stratification in Neoshamanic Groups.' *Ethnologia Slovaca et Slavica* 36: 15–38.
- 2018 'Čierna skrinka antropológického výskumu: Niekoľko poznámok k bádaniu súčasnej spirituality.' *Biograf* 67–68: 57–70.
- 2019 *Mágia a čarodejníctvo v etnografických štúdiách do polovice 20. storočia*. Bratislava: AKAMedia.
- 2021 'Ludové náboženstvo ako tragédia teológa: čarodejníctvo z perspektívy kognitívnej antropológie.' *Dingir* 24(3): 76–79.
- 2023 'Communication of Tradition(s): Narrative Templates of Magical Healing in Urban Shamanism.' *Traditiones* 52(1): 11–38.
- Bužeková, Tatiana, Danijela Jerotijević and Martin Kanovský 2011 *Kognitívne vysvetlenie magických predstáv a praktík*. Bratislava: ETERNA Press.
- Chomsky, Noam 1957 *Syntactic Structures*. The Hague: Mouton.
- 1959 'A Review of B. F. Skinner's *Verbal Behavior*.' *Language* 35(1): 26–58.
- Chvaja, Radim, Juana Chinchilla, Ángel Gómez and Martin Lang 2023 'Religious Costly Signal Induces More Trustworthiness Than Secular Costly Signal: A Study of Pilgrimage to Santiago de Compostela.' *European Journal of Social Psychology* 53: 1294–1308. DOI: 10.1002/ejsp.2975.
- D'Andrade, Roy 1995 *The Development of Cognitive Anthropology*. Cambridge/New York: Cambridge University Press.
- Darwin, Charles 1859 *The Origin of Species: By Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London: John Murray, Albemable Street.
- 1871 *The Descent of Man, and Selection in Relation to Sex*. London: John Murray, Albemable Street.
- Durkheim, Emile 1995 [1915] *The Elementary Forms of Religious Life*. New York: Free Press.
- Geertz, Armin W. 2010 'Brain, Body and Culture: A Bio-cultural Theory of Religion.' *Method & Theory in the Study of Religion* 22(4): 304–321.
- 2020 'How did Ignorance Become Fact in American Religious Studies? A Reluctant Reply to Ivan Strenski.' *Studi e Materiali di Storia delle Religioni* 86(1): 365–403.
- Geertz, Armin W. and Eva Kundtová Klocová 2019 'Ritual and Embodied Cognition.' In: *The Oxford Handbook of Early Christian Ritual*. Risto Uro, Juliette J. Day, Richard E. Demaris and Rikard Roitto, eds. Oxford: Oxford University Press. Pp. 74–94.
- Guthrie, Stewart 1993 *Faces in the Clouds: A New Theory of Religion*. New York: Oxford University Press.
- 2013 'Early Cognitive Theorists of Religion: Robin Horton and His Predecessors.' In: *Mental Culture: Classical Social Theory and the Cognitive Science of Religion*. Dimitris Xygalatas and William W. McCorkle, eds. United Kingdom: Acumen Publishing. Pp. 33–51.
- Hampejs, Tomáš and Aleš Chalupa 2014 'Kognitivní věda o náboženství. Východiska, cíle a krátka historie.' *Pantheon* 9(1): 10–43.
- Henrich, Joseph 2009 'The Evolution of Costly Displays, Cooperation and Religion: Credibility Enhancing Displays and Their Implications for Cultural Evolution.' *Evolution and Human Behavior* 30: 244–260. DOI: 10.1016/j.evolhumbehav.2009.03.005.
- 2015 *The Secret of Our Success: How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smart*. Princeton, NJ: Princeton University Press.
- Hlôšková, Hana 2008 *Individuálna a kolektívna historická pamäť (vybrané folkloristické aspekty)*. Bratislava: Univerzita Komenského.

- Hrustič, Tomáš 2003 'Náčrt kognitívne teórie náboženstva.' *Cargo* 1(3): 54–69.
- Irons, William 2001 'Religion as a Hard-to-Fake Sign of Commitment.' In: *Evolution and the Capacity for Commitment*. Randolph M. Nesse, ed. New York: Russel Sage Foundation. Pp. 292–309.
- Jerotijević, Danijela 2011 'Magické myslenia a kontaminácia.' In: *Kognitívne vysvetlenie magických predstáv a praktík*. Tatiana Bužeková, Danijela Jerotijević and Martin Kanovský, eds. Bratislava: ETERNA Press. Pp. 22–74.
- 2012 'Od interview k experimentu: kombinované metódy pri výskume magických predstáv a praktík.' In: *Metodologické problémy v etnografickom výskume sociálnych reprezentácií*. Tatiana Bužeková and Danijela Jerotijević, eds. Bratislava: Ústav etnológie Slovenskej akadémie vied. Pp. 108–121.
- 2013 "Magické zákutia": metodologické problémy pri výskume magických predstáv a praktík.' *Sociální studia: Náboženství v laboratoři* 10(2): 27–43. DOI: 10.5817/SOC2013-2-27.
- 2015 'The Coexistence of Different Explanatory Models of Misfortune: A Case from Serbia.' *Human Affairs* 25: 261–275. DOI: 10.1515/humaff-2015-0022.
- Jerotijević, Danijela and Peter Maňo 2014 'Rituál a mysl: Kognitívni a evoluční teorie rituálu.' *Pantheon* 9(1): 139–166.
- Kanovský, Martin 1998 'Na margo jedného marga.' *Slovenský národopis* 46(2): 194–195.
- 1999 'Sémantika náboženstva a jej kognitívne základy. Aplikácia na príklade austrálskych aborigénnych náboženstiev.' *Religio* VII(2): 145–176.
- 2002a 'Kognitívne vysvetlenie distribúcie niektorých náboženských predstáv v oblasti Bielych Karpát.' *Slovenský národopis* 50(1): 56–69.
- 2002b 'Kultúra a kognitívna myseľ.' In: *Kognitívne vedy*. Ján Rybár, Lubica Beňušková and Vladimír Kvasnička, eds. Bratislava: Kalligram. Pp. 163–195.
- 2004 'Etnická identita, kognitívny prístup a terénny výskum: Ako na to?' *Etnologické rozpravy* 11(2): 11–24.
- 2011 'Kognitívne vysvetlenia distribúcie náboženských predstáv: Spresnenia a kritiky.' In: *Kognitívne vysvetlenie magických predstáv a praktík*. Tatiana Bužeková, Danijela Jerotijević and Martin Kanovský, eds. Bratislava: ETERNA Press. Pp. 7–21.
- Kundt, Radek 2015 *Contemporary Evolutionary Theories of Culture and the Study of Religion*. London: Bloomsbury.
- Kundtová Klocová, Eva 2014 'Experimentálny prístup ve studiu náboženství: Podoby a využití experimentu v sociálněvědném výzkumu.' *Pantheon* 9(1): 71–92.
- Lang, Martin 2014 'Náboženství a prosocialita v evoluční perspektivě: Základní mechanismy lidského sociálního chování.' *Pantheon* (9)1: 167–187.
- Lang, Martin and Radek Kundt 2020 'Evolutionary, Cognitive, and Contextual Approaches to the Study of Religious Systems: A Proposition of Synthesis.' *Method & Theory in the Study of Religion* 32(1): 1–47. DOI: 10.1163/15700682-12341466.
- 2023 'The Evolution of Human Ritual Behaviour as a Cooperative Signaling Platform.' *Religion, Brain & Behavior* 23: 1–23. DOI: 10.1080/2153599X.2023.2197977.
- Lawson, E. Thomas and Robert McCauley 1990 *Rethinking Religion: Connecting Cognition and Culture*. Cambridge: Cambridge University Press.
- Maňo, Peter 2019 *Religious Ritual and Socio-Economic Status: A Study of the Kavadi Ritual in Mauritius*. Doctoral Dissertation. Comenius University: Bratislava.
- Maňo, Peter and Dimitris Xygalatas 2022. 'Ritual Form and Ritual Choice Among Mauritian Hindus. Slovenský národopis.' *Slovenský Národopis* 70(2): 186–209.
- Martin, Luther H. and Donald Wiebe, eds. 2017 *Religion Explained?: The Cognitive Science of Religion after Twenty-Five Years (Scientific Studies of Religion: Inquiry and Explanation)*. London: Bloomsbury.
- McCauley, Robert N. and E. Thomas Lawson 2002 *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms*. Cambridge: Cambridge University Press, 2002.
- Mentel, Andrej 2022a 'Rituals and Group Solidarity: An Ethnographic Case Study.' *Slovenský národopis*, 70(2): 228–247.
- 2002b 'An Adventurous Expedition into the Land of Naturalistic Ritual Research. A Review on Dimitris Xygalatas, *Ritual: How Seemingly Senseless Acts Make Life Worth Living*.' *e-Rhizome* 4(1): 18–28.
- Power, Eleanor 2016 'Discerning Devotion: Testing the Signaling Theory of Religion.' *Evolution and Human Behaviour* 38: 82–91. DOI: 10.1016/j.evolhumbehav.2016.07.003.

- Purzycki, Benjamin G. and Ayana Willard 2016 'MCI theory: A Critical Discussion.' *Religion, Brain & Behavior* 6(3): 207–248. DOI: 10.1080/2153599X.2015.1024915.
- Purzycki, Benjamin G., Martin Lang, Joseph Henrich and Ara Norenzayan 2022 'The Evolution of Religion and Morality Project: Reflections and Looking Ahead.' *Religion, Brain & Behavior* 12(1–2): 190–211. DOI: 10.1080/2153599X.2021.2021546.
- Purzycki, Benjamin G. and Richard Sosis 2009 'The Religious System as Adaptive: Cognitive Flexibility, Public Displays, and Acceptance.' In: *The Biological Evolution of Religious Mind and Behavior*. Eckart Voland and Wulf Schiefenhövel, eds. Luxemburg: Springer Science + Business Media. Pp. 243–256. DOI: 10.1007/978-3-642-00128-4\_17.
- 2023 'Religious Systems Evolving.' *Religion, Brain and Behavior*: 1–13. DOI: 10.1080/2153599X.2023.2240880.
- Pyysiäinen, Ilkka 2012 'Cognitive Science of Religion: State-of-the-Art.' *Journal for the Cognitive Science of Religion* 1(1): 5–28.
- Rappaport, Roy 1999 *Ritual and Religion in the Making of Humanity*. Cambridge: Cambridge University Press.
- Ridley, Matt 2007 *Červená královna: Sexuality a vývoj lidské přirozenosti*. Prague: Portál.
- Rybář, Ján, Ľubica Beňušková and Vladimír Kvasnička, eds. 2002 *Kognitívne vedy*. Bratislava: Kalligram.
- Schjoedt, Uffe and Marc Andersen 2017 'How Does Religious Experience Work in Predictive Minds?' *Religion, Brain & Behavior* 7(4): 320–323. DOI: 10.1080/2153599X.2016.1249913.
- Shore, Bradd 1996 *Culture in Mind: Cognition, Culture, and the Problem of Meaning*. New York: Oxford University Press.
- Soler, Montserrat 2012 'Costly Signaling, Ritual and Cooperation: Evidence from Candomblé, an Afro-Brazilian Religion.' *Evolution and Human Behavior* 33(4): 346–356. DOI: 10.1016/j.evolhumbehav.2011.11.004.
- Sosis, Richard 2003 'Why Aren't We All Hutterites? Costly Signaling Theory and Religious Behavior.' *Human Nature* 14(2): 91–127. DOI: 10.1007/s12110-003-1000-6.
- 2004 'The Adaptive Value of Religious Rituals: Rituals Promote Group Cohesion by Requiring Members to Engage in Behavior that is too Costly to Fake.' *American Scientist* 92(2): 166–172.
- 2009 'The Adaptationist-Byproduct Debate on the Evolution of Religion: Five Misunderstandings of the Adaptationist Program.' *Journal of Cognition and Culture* 9(3–4): 315–332. DOI: 10.1163/156770909X12518536414411.
- Sosis, Richard and Bradley Ruffle 2003 'Religious Ritual and Cooperation: Testing for a Relationship on Israeli Religious and Secular Kibbutzim.' *Current Anthropology* 44(5): 713–722. DOI: 10.1086/379260.
- Sosis, Richard and Candace Alcorta 2003 'Signaling, Solidarity, and the Sacred: The Evolution of Religious Behavior.' *Evolutionary Anthropology* 12(6): 264–274. DOI: 10.1002/evan.10120.
- Sperber, Dan 1975 *Rethinking Symbolism*. Cambridge: Cambridge University Press.
- 1985 'Anthropology and Psychology: Towards an Epidemiology of Representations.' *Man* 20(1): 73–89.
- 1996 *Explaining Culture*. New York: Cambridge University Press.
- Stocking, George W. 1968 *Race, Culture and Evolution: Essays in the History of Anthropology*. New York: Free Press.
- 1987 *Victorian Anthropology*. New York: Free Press.
- Turner, Victor W. 1995 [1969] *The Ritual Process: Structure and Anti-Structure*. New York: Aldine de Gruyter.
- Tužinská, Helena 2006 'Kritériá tradičného diskurzu podľa Pascala Boyera.' In: *Od folklórneho textu ku kontextu*. Eva Krekovičová, ed. Bratislava: Ústav etnológie SAV. Pp. 33–49.
- Uhrin, Michal 2018 'Úloha náboženských expertov vo vysvetlení náboženského správania laikov.' *Etnologické rozpravy* 25(2): 40–63.
- 2019 'The Concept of Tradition and the Modes of Scholarship in Slovak Ethnology.' *Ethnologia Slovaca et Slavica* 40: 93–113.
- 2021 'Vladimír Bahna: Supernatural Experience and the Narrative Mind. The Social Contagion of Memories.' *Ethnologia Slovaca et Slavica* 42: 105–108.
- Uhrin, Michal and Tatiana Bužeková 2022 'The Role of Subtle Signals Linked to Religious Rituals in the Evaluation of Newcomers by a Village Community.' *Slovenský Národopis* 70(2): 210–227.

- Urbancová, Viera 1987 *Slovenská etnografia v 19. storočí*. Martin: Matica slovenská.
- Van Elk, Michiel and André Aleman 2017 'Brain Mechanisms in Religion and Spirituality: An Integrative Predictive Processing Framework.' *Neuroscience & Biobehavioral Reviews* 73: 359–378. DOI: 10.1016/j.neubiorev.2016.12.031.
- White, Claire 2021 *An Introduction to the Cognitive Science of Religion*. New York: Routledge, Taylor & Francis Books.
- Whitehouse, Harvey 2000 *Arguments and Icons: Divergent Modes of Religiosity*. Oxford: Oxford University Press.
- 2002 'Modes of Religiosity: A Cognitive Explanation of the Sociopolitical Dynamics of Religion.' *Method and Theory in the Study of Religion* 14(3/4): 293–315.
- 2004 *Modes of Religiosity: A Cognitive Theory of Religious Transmission*. Walnut Creek, CA: AltaMira Press.
- 2009 'Teorie dvou módů náboženskosti.' *Religio* 17(2): 209–230.
- 2021 *The Ritual Animal. Imitation and Cohesion in the Evolution of Social Complexity*. Oxford: Oxford University Press.
- Xygalatas, Dimitris 2012 *The Burning Saints: Cognition and Culture in the Fire-Walking Rituals of the Anastenaria*. London: Routledge.
- 2013 'Přenos laboratoře do terénu: Využití smíšených metod během terénního studia náboženství.' *Sociální studia* 10(2): 15–25.
- 2022 *Ritual: How Seemingly Senseless Acts Make Life Worth Living*. New York: Little, Brown Spark, Hachette Book Group.
- Xygalatas, Dimitris, Peter Maňo, Vladimír Bahna, Eva Kundtová Klocová, Radek Kundt, Martin Lang and John H. Shaver 2021 'Social Inequality and Signaling in a Costly Ritual.' *Evolution and Human Behavior* 42(6): 524–533. DOI: 10.1016/j.evolhumbehav.2021.05.006.
- Zahavi, Amotz 1975 'Mate Selection for a Handicap.' *Journal of Theoretical Biology* 53(1): 205–214. DOI: 10.1016/0022-5193(75)90111-3.
- Zahavi, Amotz and Avishag Zahavi 1997 *The Handicap Principle: A Missing Piece of Darwin's Puzzle*. Oxford: Oxford University Press.

## POVZETEK

Antropologi se že desetletja osredotočajo na religijo in razvijajo teorije, s katerimi skušajo razložiti njene številne vidike. Kognitivni in evolucijski pristop do proučevanja religije se je pričel razvijati v sedemdesetih letih prejšnjega stoletja, nanj pa je vplivala druga kognitivna revolucija. Kognitivne in evolucijske znanosti so na področju raziskovanja religije pripeljale do prepričljivih novih vpogledov. Ob koncu devetdesetih let prejšnjega stoletja so kognitivne in evolucijske teorije religije začeli v raziskavah religije uporabljati predstavniki ozke skupine etnologov, religiozologov in antropologov na Slovaškem. Avtorji so raziskali teme, kot so versko strokovno znanje, neošamanizem v urbanem okolju, magija in nadnaravna škoda ter koeksistenca ljudskih verovanj o nadnaravnem in krščanstva. Ta vidik omogoča raziskovalcem vpogled v mehanizme in zakonitosti delovanja človeškega uma ter selekcijske pritiske, ki so jih v evoluciji človeške vrste oblikovali. Poleg tega v enaki meri upoštevajo kulturne, družbene, zgodovinske, ekonomske ali ekološke vidike.

V članku je podan pregled temeljnih konceptov kognitivne in evolucijske antropologije religije. Osredotoča se na strokovnjake, katerih dela in ideje veljajo za ključne pri razvoju tega področja. To sicer lahko pomeni, da nekateri članki, knjige ali raziskave morda ne bodo omenjeni, vendar pa je namen članka preko primerov specifičnih raziskovalnih interesov izpostaviti širše splošne trende v razvoju kognitivnega in evolucijskega pristopa do

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proučevanja religije. Drugi cilj je pokazati, kako se kognitivne in evolucijske teorije religije odražajo v etnologiji in sociokulturni antropologiji na Slovaškem. Prispevek vključuje ne le empirične raziskave, v katerih so te teorije uporabljene, ampak tudi študije, ki odražajo teoretične in metodološke vidike kognitivnih in evolucijskih pristopov k proučevanju religije. Kljub temu, da niti v tujini niti na Slovaškem kognitivni in evolucijski pristopi niso dominantni trend v etnologiji in antropologiji, so uspeli pritegnili pozornost ozke skupine strokovnjakov, ki jih uporabljajo za raziskovanje raznovrstnih tem.