introduction

Experiencing Rituals

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Seeing Is Believing?

Pluris est oculatus testis unus, quam auriti decem.
Qui audiunt, audita dicunt: qui vident, plane sciunt.

One eyewitness weighs more than ten hearsays.
Seeing is believing, all the world over.

<div align="right">

Plautus, *Truc.* Act II. Sc. 6 line 8.

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The ways in which we engage with rituals are tied inextricably to cognitive experiences: sound, sight, scent, taste, touch, and space. It is through these mechanisms that an understanding and a memory of a ritual experience are created and codified. But can we trust our senses or the cognitive process that encodes experiences as memories? Plautus's evaluation assumes that an eyewitness account of an event is more valuable than hearsay; while this may be true, it does not mean that one person's version of events is a reliable or definitive account. When assessing the ancient world, eyewitness accounts seldom survive (one would be lucky to have ten hearsays) and surviving sources must be approached with caution. Rituals are not only scripted events but performed experiences, designed to ensnare the senses of performers and participants alike. How these senses are engaged impacts the perception and memory of an event. To understand how ritual memories were made, therefore, one must assess the sensory engagement and cognitive processes through which ritual memories were created and codified; namely the experience of rituals.

Through engagement with different senses and cognitive processes, rituals are transformed from a series of scripted actions in a specific place to an interactive experience, whose outcome depends on several different factors: the performance, the audience, the context, and the atmosphere of the ritual event. While these factors often serve to strengthen the emotive context and meaning of a ritual, they can also act as variables, resulting in a plurality of different outcomes for a ritual event: some positive/inclusive,

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others negative and/or exclusive. An 'eyewitness account' reflects an embodied experience, a multifaceted memory that is the culmination of sensory interpretations: not only seeing an event but also reading faces, speech, tone, gestures, and atmosphere. For Plautus, this 'first hand' experience appears to lend value and credulity to an eyewitness account as well as an opportunity to assess the source. Experience, however, is a double-edged sword: what unites can create discord, what provides a sense of belonging can alienate, what is meant to portray continuity can represent change, and what is meant to honour can bring shame. While an eyewitness account is undoubtedly valuable, one must also acknowledge its limitations: a single version of an experience cannot capture the plurality of possible experiences, interpretations, or outcomes of a ritual performance.[1] The experience of a ritual event is a crucial factor in the perception and remembrance of ritual; but how can one embed the variability of experience(s) into approaches and analyses of rituals?

Focusing too much on individual experiences (if there is enough evidence in order to do so), can result in becoming myopic to larger socio-cultural factors which inform religious experiences and drive religious change. On the other hand, analysing only religious rituals and experiences in terms of cult-wide and/or collective phenomena, risks overlooking localized religious practices and of ignoring neurodiverse experiences. Unlike other scholars who research rituals and ritual experiences (in psychology or anthropology, for example), scholars of ancient religions cannot rely on designing group experiments or conducting participant interviews to gather data. Instead, our evidence is often incomplete or corrupted and can be tainted further by bias or misinterpretation. All of these elements render the tightrope between individual/subjectivist approaches (i.e. where religious experiences are seen as subjective and highly individual) and collective/constructivist approaches (i.e. where religious experiences are understood to be rooted in cultural and social factors) even more perilous to tread.[2] The cross- and inter-disciplinary cognitive sciences, by viewing cognition as multifaceted – embodied, distributed, situated, extended, materialized, and encultured[3] – offer new perspectives

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[1] As Eidinow *et al.* (2022: 10) have observed, 'humanities and social science accounts have not in general informed attempts to identify the cognitive and brain processes underlying variations in experience – in other words, the full set of processes by which religiously interpreted experience arises within specific human contexts.' On the limitations of historical sources in analysing religious experiences see Martin 2022: 218–219.

[2] Patzelt 2020: 11, 13.

[3] Geertz (2017: 37) states: 'cognition is embodied (i.e. that it is integrated in body and brain through the nervous system), distributed (i.e. that we share with networks of other brains and bodies), situated

in understanding *both* individual *and* collective elements of rituals and ritual experiences.[4]

In the last two decades, spurred by scientific advancements in neuroscience and the cognitive sciences, a growing number of scholars have begun to apply cognitive and sensory theoretical approaches to the study of archaeological and historical evidence, especially with respect to ancient religions and rituals.[5] This edited volume assembles a series of case studies from international scholars (at varying stages of their careers), which explore interdisciplinary aspects of religious ritual and ritual experience in the Roman world. Focusing on cognitive and sensory approaches, these case studies critically (re)examine established views and material finds relating to rituals and ritual experiences. As Esther Eidinow notes 'some current ancient historical research . . . has tended to privilege mind *or* body as its focus . . . by distinguishing sensory from cognitive approaches'.[6] By understanding sensory and cognitive processes as inextricably connected, and by merging sensory and cognitive scholarship and approaches, this volume pushes disciplinary boundaries and offers novel interpretations. The case studies in this volume were chosen because they address elements of both polytheistic and Christian rituals, covering the period from the late Republic to late Antiquity, while offering a comprehensive examination of evidence (historical, archaeological, iconographic, and epigraphic) from Italy as well as (a range of) Roman provinces.

In discussions between contributors of this volume, it became clear that the cognitive approaches applied to ancient rituals were relevant not only to the ancient world, but reflect an approach to ritual performances and events that could be applied across time, space, and disciplines on a broad scale, including one's own personal ritual experiences. While ancient religion is often placed in a separate realm, viewed with values and approaches that are distinct from modern society,[7] the case studies in this volume employ a broad range of cross- and inter-disciplinary

(i.e. that we learn from these others), extended (i.e. that we exude our emotions, thoughts and experiences into the world), materialized (i.e. that we materially manifest and ground our cognition in material culture) and encultured (i.e. that our cognition is deeply anchored in and realized by cultural ideas, models, values and so on).' See also Ambasciano 2017: 142, Geertz 2010, Kundtová Klocová and Geertz 2019, and Eidinow *et al.* 2022: 3–4.

[4] Anderson *et al.* (2018: 15) state: 'notions of cognition can be shown to be fundamental to how we conceptualise debates in every discipline – the study of cognitive phenomena cannot be considered a specialist niche, but is rather a necessary underpinning of any study of humans in the world.'

[5] Some of these studies include: Chaniotis 2006, Chaniotis 2013, Cusumano *et al.* 2013, Day 2013, Hamilakis 2013, Rüpke 2013, Rüpke 2016, Van der Ploeg 2016, Cairns and Nelis 2017, Mackey 2017, Driediger-Murphy and Eidinow 2019, and Papadopoulos *et al.* 2019, among others.

[6] Eidinow 2022: 70, n.4.   [7] Eidinow *et al.* 2022: 7.

perspectives to address fundamental and universal questions about religious ritual and ritual experience. These questions include:

- What role do the senses play in the performance/understanding/remembering of ritual?
- How does the organization of physical space (religious space, urban space etc.) inform ritual movement?
- What role do emotions play in religious rituals/performances?
- How does material culture reflect/inform ritual understanding?
- How are religious rituals learned/remembered/transferred?

Cognitive Science of Religion and Cognitive Historiography

> The cognitive science of religion is paving the way for new explanations of religion. Indeed, CSR has changed the way we view the world and how we analyze it.
>
> Geertz, van Mulukom and Laigaard Nielbo[8]

The year 2020 marked the thirty-year anniversary since the founding of cognitive science of religion (CSR) as a discipline.[9] To understand the ways in which cognitive studies have shaped approaches to religion, and specifically to rituals, a brief exploration of this emerging field and its methodologies is necessary. The interdisciplinary field of CSR was initially established to challenge the approaches and theories of cultural determinism and extreme cultural relativism, which predominated in the study of religion in the second half of the twentieth century, and which lacked a comprehensive explanation for how religious concepts are formed, learned and diffused. Departing from earlier approaches, CSR asserts that religion and its components can be studied scientifically; that humans have innate inclinations to hold certain cognitive biases (such as the tendency to anthropomorphise[10] divinities); and that cognitive processes, influenced by evolutionary, environmental, and cultural factors, can mould and constrain religious ideas, beliefs, and behaviours. As such, CSR scholars explore how religions are formed, and how religious ideas,

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[8] Geertz *et al.* 2017/2019: 2.   [9] Geertz 2017: 36–37.

[10] Anthropomorphism (i.e. the tendency to imagine and depict divinities in human form) has been attested in cultures throughout the world, dating back to the Late Stone Age. The ancient Greeks and Romans were aware of this cognitive bias, with the Greek philosopher Xenophanes of Colophon famously remarking that humans tend to depict their gods looking and behaving like humans, and that if horses could draw their gods they would draw them as horses (fragments B14 and B15).

beliefs, and behaviours are learned, remembered, and transmitted between individuals and groups (horizontal transmission) as well as through generations (vertical transmission).[11] As CSR scholar Claire White states: 'At the core, CSR scholars accept that religion is a product of the mind situated in its cultural environment.'[12] Employing a methodology that deconstructs religion into principal components (e.g. religious rituals and experiences, supernatural agents, beliefs about the afterlife etc.), CSR scholars apply a variety of interdisciplinary approaches to formulate and empirically test theories and hypotheses concerning these components, in order to assess cross-cultural patterns of religious thought and behaviour. This methodology contributes to a more comprehensive and universal understanding of religion and religious phenomena.[13]

These bottom-up, scientific approaches to religion have been especially lucrative with respect to the study of religious rituals. One particular contribution of CSR is in explaining how religious ideas, beliefs, and practices (including rituals) are successfully transmitted and why particular concepts and practices endure across cultures and throughout history.[14] Although most CSR scholars agree that ritualization initially developed among early human populations and that humans are psychologically predisposed to ritual behaviour,[15] the extent to which ritual behaviours are an evolutionary adaptation or a by-product of cognitive processes is still debated.[16] Whether one views the successful transmission and endurance of religious practices as an adaptation or a by-product, it is a universal truth

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[11] White 2021: 1–6 and 20. For a summary of key CSR studies on ritual see White 2021: 255–305.

[12] White 2021: 28.

[13] White 2021: 11–15, 32–33, 36–37. By merging evolution, culture, and cognition to explore universal cognitive and cross-cultural aspects of religion, CSR aims can be viewed to align with the omniculturalism imperative. Fathali Moghaddam (2012: 306) describes the omniculturalism imperative as: 'During the first stage, the *omniculturalism imperative* compels us to give priority to human commonalities . . . in omniculturalism, the focus is on universals in human behavior as established by scientific research . . . During stage two of omniculturalism, group-based differences are introduced, and the value of also having diversity is highlighted. However, the priority remains with human commonalities, and group-based differences are treated as secondary. The end result of omniculturalism is a society in which people are knowledgeable about, and give priority to, human commonalities, but also leave some room for the recognition and further development of group distinctiveness.' These approaches should be especially encouraged in the context of analysing Roman religious rituals and ritual experiences, given the diverse socio-cultural context of the Roman empire and the recent rise of globalization and glocalization theoretical approaches in Roman archaeology.

[14] White 2021: 255–256.   [15] White 2021: 95, table 4.2, and 312.

[16] Scholars such as Richard Sosis, Joseph Bulbulia, Cristine H. Legare and Ara Norenzayan propose that aspects of ritual which promote individual health and/or group cooperation and cohesion may have been selected for and were therefore successfully transmitted, enduring across cultures and historical periods. However, other CSR scholars, such as Pascal Boyer, E. Thomas Lawson and Robert N. McCauley, propose that aspects of religions (such as rituals) can be understood as by-products of

that certain religious ideas, beliefs, and behaviours recur across time and societies. As Claire White states 'This is in part because ideas are constrained by our experience of the world.'[17] The common constraints of ritual experiences, which have been observed across cultures, time, and space, reflect the illuminating results of cognitive approaches to rituals: finding commonality through a series of diverse and dynamic assessments. By integrating perspectives from evolution, cognition, and culture into the study of religion, CSR can provide us with a richer understanding of how human cognitive processes merge with environmental factors to produce and communicate ritual practices, and why humans have continued to seek out ritual experiences.

CSR approaches also address longstanding challenges in the study of ritual behaviours, in particular ritual deviations, emotional contexts (e.g. fear of rejection or anxiety), and group dynamics, as is explored further in Abigail Graham's Chapter 4 in this volume. Since it is not always clear how performed ritual actions achieve the desired ritual goal (i.e. rituals are causally opaque) and since individual experience is limited, humans are therefore less prone to deviate from ritual behaviours which are perceived as traditional or 'correct'. From an evolutionary standpoint, challenging group norms or refusing to participate in group activities may have resulted in social ostracism and death for our ancestors. Therefore, fear of social rejection and the desire to signal group commitment may also explain why individuals are prone to faithfully imitate and transmit ritual behaviours, and why aspects of ritual persist over time.[18]

Why rituals persist can also be explained partly by the beneficial effects that they produce. In terms of effects on individuals, CSR research has shown that rituals contribute to improving the physical and mental health of ritual participants, such as reducing anxiety, as well as providing a semblance of control during tumultuous times.[19] Pascal Boyer and

human cognitive processes and biases. See Bulbulia 2004, McCauley 2020: 112–115 and White 2021: 66–69, 257, and 315–316.

[17] White 2021: 49.

[18] See Legare and Nielsen 2015 and Watson-Jones et al. 2016. White (2021: 262) states: 'As Legare and colleagues have argued, from an evolutionary perspective, given the variability and limitations of personal experience and intuition, and the cognitive effort involved in inferring intentions and goals, natural selection ought to favor a social learning strategy where we imitate ritual behaviors as closely as possible. In other words, what you know about the world is limited, and when uncertain about something, a sound strategy is to copy others whom you think know better.'

[19] White 2021: 65, 285. On the anxiety-relieving effects of rituals and sense of control see: Whitson and Galinsky 2008, Sosis and Handwerker 2011, Lang et al. 2015, and Lang et al. 2020, among others. McNamara (2014: 162–163) notes that several studies in neurosciences have found that religious practices have beneficial effects on individuals, such as increased happiness and self-control.

Pierre Liénard's 'Hazard Precaution System' theory posits that when faced with unpredictable or threatening situations we spontaneously exhibit ritualized behaviours, which provide an anxiety-reducing effect and re-instil a sense of control over our environment.

> Anxiety is lowered by subjectively containing it through scripted action . . . Participants focus on the activity they are performing, not on the goal of each behavior, which swamps working memory. Thus, attention is readily deployed towards the concern to perform the actions correctly . . . These effects are at least temporary, while the acts are performed, and so the actions are repeated . . . to reduce anxiety.[20]

The ways in which we cognitively process and experience the world around us influence our actions, which, in their turn, exert an effect on our cognitive and affective states.

At the level of the group, rituals serve to build trust, cohesion, and cooperation among group members, as well as to instil and reinforce group values (these effects are discussed in Blanka Misic's Chapter 1).[21] Participating in extreme rituals can serve as a costly signal of group commitment and belonging, promoting trust and cooperation between group members.[22] For example, experimental research in CSR indicates that high-intensity and painful rituals create stronger bonds between ritual participants. Physiologically, extreme rituals can lead to increased heart rates and even synchronized heart rates among close-knit ritual participants and spectators, in addition to inducing feelings of euphoria, which opens ritual participants to social bonding as well as strengthening existing bonds.[23] Rituals can also become Credibility Enhancing Displays (CRED) – an individual's credibility is enhanced within their social circle when they actively participate in a costly ritual, with other individuals then being encouraged to follow and imitate their ritual behaviour, therefore successfully transmitting ritual knowledge.[24]

Although CSR research on the psychological, physiological, and social effects of rituals has yielded illuminating results, further research on ritual experiences is still needed. Only a few CSR researchers have focused on

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[20] White 2021: 286. On Hazard Precaution System theory see: Boyer and Liénard 2006 and Liénard and Boyer 2006.

[21] White 2021: 288–289, Dunbar 2021: 24, Hobson *et al.* 2017: 11, and Watson-Jones and Legare 2016.

[22] White 2021: 293–295. On costly signaling theory see Sosis 2004.

[23] Konvalinka *et al.* 2011, Xygalatas *et al.* 2013, Xygalatas *et al.* 2013b, Fischer *et al.* 2014, Xygalatas *et al.* 2019, McCauley 2020: 107, and White 2021: 292–293.

[24] McCauley 2020: 115–116 and White 2021: 295–296. On the theory of Credibility Enhancing Displays see Henrich 2009. On costly rituals and Credibility Enhancing Displays see Xygalatas 2022: 198–207.

a detailed study of ritual experiences, such as Dimitris Xygalatas and his colleagues on experiences of extreme, fire-walking rituals (discussed further in the Conclusion chapter).[25] Ann Taves and colleagues at the UC Santa Barbara Religion, Experience and Mind Lab Group have also conducted research on aspects of religious experience, such as near-death experiences.[26] Research on religious experience has further been informed by neuroscientific approaches. For instance, neuroscientist Patrick McNamara has observed that specific areas of the brain which generate and process religious experiences also regulate a sense of Self, therefore arguing that religion (and religious experiences) can serve to develop one's self-consciousness.[27] However, criticisms have been laid against CSR research for focusing too much on cognitive processes and not enough on the roles of emotion, body, and environment in religion.[28] Certainly, ritual experiences cannot be studied without all of these elements – we use our brains, our bodies, and our senses to perform ritual actions, and the engagement of our brains, bodies, and senses with our environment and our affective states produces ritual experience.

One promising way towards studying ritual experiences is by understanding individual brains and bodies as interconnected with each other and with their environments, therefore viewing cognition as embodied, distributed, situated, extended, materialized, and encultured. CSR scholar Armin W. Geertz has championed this view with his biocultural theory of religion 'which is based on an expanded view of cognition that is anchored in the brain and body, dependent upon culture, and extended and distributed beyond individual minds ... Geertz proposes that understanding which manipulations are at play in religion, and how they implement cultural values, alter emotional states, and interact with cognitive processing can enrich our understanding of religion'.[29] The aim of this volume is to contribute to CSR research on ritual experiences and to build upon Geertz's findings by analysing Roman ritual experiences as products of cognitive processes, affective states, and sensory organs – all of which are influenced by neurological, environmental, and socio-cultural factors. Yet, how can these cognitive approaches enhance our understanding of the ancient world?

Although the cross- and inter-disciplinary field of CSR is growing every day, it is only within the last fifteen years or so that historians,

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[25] Konvalinka *et al.* 2011, Xygalatas *et al.* 2013b, among others.
[26] Taves 2011 and White 2021: 324.   [27] McNamara 2014: 246.
[28] Geertz 2010b, and Gibson 2008.   [29] White 2021: 318 (quote) and Geertz 2010.

classicists, and other scholars of ancient religions have started to engage with CSR approaches, creating a new subfield of the discipline called cognitive historiography.[30] Inspired initially by the pioneering work of CSR scholars such as anthropologists Pascal Boyer[31] and Harvey Whitehouse,[32] and philosophy and comparative religion scholars Robert N. McCauley and E. Thomas Lawson,[33] scholars of cognitive historiography have enriched and pushed the boundaries of the study of ancient religions, especially through their (re)examination of ancient religious experiences and rituals. For example, Harvey Whitehouse's 'Modes of Religiosity' theory, which describes ritual and ritual experience in terms of two modes – the imagistic and the doctrinal – has been particularly popular among historians and archaeologists, resulting in several publications which test Whitehouse's model within various ancient religious contexts.[34] In addition to the Modes of Religiosity approach, the application of a variety of other cognitive perspectives to case studies of ancient religions have further enhanced our understanding not only of ritual practices and ritual experiences, but also recast the way we now examine religious texts, religious objects, religious iconography, and religious beliefs and attitudes. These case studies range from the study of monotheistic religions (Judaism and Christianity),[35] to the examination of select Graeco-Roman polytheistic cults (including Asklepios,[36] Isis and Serapis,[37] Cybele/Attis,[38] Dionysos,[39] and Bona Dea[40]), belief systems,[41] and religious experiences.[42]

More than with any other ancient cult, the application of cognitive approaches to the study of the cult of Mithras has yielded particularly fruitful scholarship to date.[43] In general, the cult of Mithras has been

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[30] The creation of the International Association for the Cognitive Science of Religion (IACSR) in 2006, alongside the creation of the *Journal for the Cognitive Science of Religion* and the *Journal of Cognitive Historiography*, whose first volumes were published in 2013 and 2014 respectively, has spurred a wider range of scholars to engage with cognitive approaches in the study of religion; bridging disciplinary gaps and encouraging collaboration among international scholars from the Humanities, Social Sciences and Natural Sciences.

[31] Boyer 1994.

[32] Whitehouse 2000 and 2004, and Whitehouse and Laidlaw 2004, among others.

[33] Lawson and McCauley 1990, and McCauley and Lawson 2002.

[34] See, for example, Whitehouse and Martin 2004, Martin and Pachis 2009, Martin and Sørensen 2011, Martin 2015, Misic 2015 and 2019, and Panagiotidou and Beck 2019, among others. For a brief summary of Whitehouse's Modes of Religiosity theory see White 2021: 269–278.

[35] Lundhaug 2014, Harkins 2015, Feder 2016, Hallvard Korsvoll 2017, and Robertson 2017, among others.

[36] Panagiotidou 2014 and 2022.   [37] Pachis 2014.   [38] Anders 2009.

[39] Giovanni 2009, and Ulrich 2009.   [40] Ambasciano 2016 and 2022.   [41] Larson 2016.

[42] Ustinova 2009 and 2018.

[43] Beck 2004 and 2006, Martin 2006, Chalupa 2011, Beck 2014, Griffith 2014, Martin 2015, Misic 2015, Panagiotidou and Beck 2017, and Panagiotidou 2018, among others.

approached from two cognitive perspectives: Harvey Whitehouse's Modes of Religiosity theory for the study of Mithraic rituals,[44] and Roger Beck's 'Star-Talk' for the study of mental representations and astrological/astronomical elements of Mithraism.[45] Luther H. Martin has emerged as the leading scholar in applying cognitive approaches, and especially Whitehouse's Modes of Religiosity theory, to archaeological and iconographic evidence from the cult of Mithras. Martin's work, among other contributions, has argued for the importance of emotionally arousing and imagistic aspects of Mithraic rituals, and has helped to dispel the 'top-down' approach to Mithraism (i.e. the view of a common, standardized Mithraic myth-narrative belief system among all initiates of the religion).[46] On the other hand, Roger Beck's application of cognitive approaches has helped Mithraic scholars gain a deeper understanding of astrological and astronomical belief systems of Mithraism. His 'Star-Talk' concept, as a way to understand mental representations and to decode systems of signs, has influenced not only Mithraic scholarship,[47] but has also been applied to other ancient 'mystery' cults such as the cult of Isis.[48] In addition to these approaches, the ever-growing body of cognitive research on social cohesion and extreme rituals,[49] as well as ritual encoding and recall[50] is helping to open new pathways to understanding ritual behaviour and ritual experiences both in modern and ancient religions.

The emergence of cognitive historiography and the broader application of CSR approaches to the ancient world offer vast potential for further study. This volume presents one small step in applying cognitive approaches, including aspects of CSR's successful framework, to explore the role of ritual experiences in the ancient world. While ritual case studies in this work fall across a broad range of time, space, and purpose, they converge on similar aspects of ritual experience: the role of repetition, ritual deviation, group dynamics, object agency, and the evolution of a ritual within various emotional, physical, and spatial contexts. However divergent the resulting ritual experiences may have been, these components continue to emerge as the foundation of a ritual experience.

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[44] Beck 2004, Martin 2006, Misic 2015, and Panagiotidou 2018, among others.

[45] Beck 2006 and 2014, Panagiotidou 2012.

[46] Martin 2006. See also Martin and Pachis 2009 and Martin 2022.   [47] Panagiotidou 2012.

[48] Pachis 2012.

[49] Dimitris Xygalatas and his scholarship on fire-walking rituals (see, for example, Xygalatas et al. 2019) have been instrumental in understanding extreme and/or painful rituals from a cognitive perspective. Specifically, on Mithraic ritual and social cohesion see Panagiotidou 2018.

[50] Hobson et al. 2017 and van Mulukom 2017, among others.